Development of Statewide Water Quality Standards for Utah Wetlands

Appendix A - Great Salt Lake Wetland Conservation Action Planning Meeting materials

What's included in this Appendix

This appendix contains details from Conservation Action Planning (CAP) meetings held during the spring of 2018. The meetings were devoted to using the CAP process to develop a beneficial use class and narrative water quality criteria for Great Salt Lake wetlands. The results of the meetings were summarized in the main report. The materials in this appendix are the CAP Workbook product.

Appendix A contains detailed tables that resulted from CAP meetings, including:

Table 1. Great Salt Lake Wetland CAP Workshop participants

Table 2. Impounded wetland indicator ratings and rankings

Table 3. Fringe wetland indicator ratings and rankings

Table 4. Playa/mudflat wetland indicator ratings and rankings

Table 5. Strategies and Objectives

Additional workshop materials, including presentations, handouts, and background materials on CAP and UDWQ wetland monitoring can be found on the Utah Division of Water Quality Wetlands Program webpage: https://deq.utah.gov/water-quality/wetland-water-quality-standards-cap-workshops-wetlands-program

Table 1. Great Salt Lake Wetland CAP Workshop participants

Participant	Representing
Ann Neville	The Nature Conservancy
Ariel Calmes	Western Resource Advocates
Ashley Kijowski	Utah Division of Wildlife Resources
Aubie Douglas	Utah State University
Becka Downard	Utah Division of Wildlife Resources
Chad Cranney	Utah Division of Wildlife Resources
Chris Cline	U.S. Fish and Wildlife Service
Chris Bittner	Utah Division of Water Quality
David England	Utah Division of Wildlife Resources
David Richards	Oreohelix
Diane Menuz	Utah Geological Survey
Dick West	South Shore Duck Clubs
Ella Sorenson	Audubon Society
Greg Low (facilitator)	Applied Conservation
Heidi Hoven	Audubon Society
Jack Ray	Rudy Duck Club
Jason Jones	Utah Division of Wildlife Resources
Jason Hardman	Salt Lake Mosquito Abatement District
Jeff Den Bleyker	Jacobs
Jeff Ostermiller	Utah Division of Water Quality
Jim Van Leeuwen	Utah Division of Wildlife Resources
John Luft	Utah Division of Wildlife Resources
Jodi Gardberg	Utah Division of Water Quality
John Neill	Utah Division of Wildlife Resources
Keith Hambrect	Utah Division of Forestry Fire & State Lands
Keith Lawson	Salt Lake Mosquito Abatement District
Laura Vernon	Utah Division of Forestry Fire & State Lands
Marisa Egbert	Utah Division of Water Resources
Michelle Baker	Utah State University
Miles McCoy-Sulentic	Utah Geological Survey
Pam Kramer	Utah Division of Wildlife Resources
Rachel Buck	Utah State University
Rich Hansen	Utah Division of Wildlife Resources
Stephanie Graham	U.S. Fish and Wildlife Service

Participant	Representing
Suzan Tahir	Utah Division of Water Quality
Theron Miller	Wasatch Front Water Quality Council
Toby Hooker	Utah Division of Water Quality
Zane Badger	Ambassador Duck Club

Table 2. Impounded wetland indicator ratings and rankings

Conservation Target: Impounded Wetlands

Key Attribute	Impounded Wetland Indicator	Poor	Fair	Good	Very Good	Current Ranking			
						Bear	Ogden	Farming-ton	GSL
Hydrologic Regime	Water available to meet broad management objectives[1], including: water level, residence time, pond flushing, habitat size, & habitat diversity. Water to maintain connectivity to other wetland targets	Insufficient water to meet management objectives in most years		Adequate water to meet management objectives except in drought years		Poor	Good	Fair	Fair
Chemical Regime	Toxic substances, including nutrients, remain below concentrations harmful to aquatic life[2]	Substances at concentrations that are toxic to aquatic life		Ambient concentrations of toxic substances at or below thresholds toxic to aquatic life		Good/ Fair	Good/ Fair	Good/ Fair	Good/ Fair
Nutrient Regime[3]	Algal mats[4] or Harmful Algal Blooms do not adversely affect aquatic life or impede recreational uses	>80% algae cover during the growing season, persist greater than a 2-year period		≤ 25% algae cover during a single season		Good	Fair	Fair	Fair
Invasive Species	Invasive species abundance does not adversely affect the populations of native plant & animal species	1 or more invasive species present & pervasive		No invasive species pervasive		Fair	Fair	Fair	Fair

[1] BRMBR Habitat Management Plan (2004) has guidance on the timing of flooding and flushing in impounded wetlands. Available Online.
[2] Utah Administrative Code R317 Table 2.14.2 lists toxic substance criteria for aquatic life. Available Online.
[3] UDWQ (2015) Impounded Wetland Reference Report shows the distribution of nitrogen concentrations (Fig 25) based on four surveys of impounded wetlands. Available Online.
[4] UDWQ (2014) Integrated Report shows algal mat distribution in impounded wetlands (Figure 4-5). Available Online.

Key Attribute	Impounded Wetland Indicator	Poor	Fair	Good	Very Good	Current Ranking			
						Bear	Ogden	Farming-ton	GSL
Macro-invertebrates[5]	Healthy macroinvertebrate diversity relative to seasonal changes & naturally occurring salinity gradients	Plant-associated Macroinvertebrate Index (PMI)[6] score in the lowest 25th percentile		PMI score in the highest 50th percentile		Good	Good	Fair/ Poor	Good
Macro-invertebrates[7]	Macroinvertebrate diversity & biomass (g/m^2) support nested targets & management goals	Low biomass of desirable functional groups		Adequate biomass of desirable functional groups		Good	Good	Good	Good
Plants	Dominance of native plant species	Native species cover <50%		Native species cover >75% of vegetated area		Fair	Fair	Fair	Fair/ Good
Plants[8]	Healthy plant community (submerged & emergent) provides adequate habitat structure to support waterfowl & other nested targets	Peak SAV cover[9] over very little of open water area (e.g. 25%)		Peak SAV cover over most of spatial extent (e.g. 75%) of open water area		Good	Fair	Poor	Good

[5] UDWQ (2015) Impounded Wetland Reference Report describes the Plant-associated Macroinvertebrate Index (Fig 17). Available Online.
[6] UDWQ (2014) Integrated Report shows PMI distribution in impounded wetlands (Figure 4-6). Available Online.
[7] 2015 GSL Wetland CAP suggested 1.5-2.5 g/m^2 of macroinvertebrate biomass (excluding gastropods) was indicative of good conditions. Available Online.
[8] Several studies support SAV condition and cover indicators: UDWQ (2018) Willard Spur summary [Available Online], UDWQ (2015) Impounded Wetland Reference Report [Available Online], and Miller and Hoven (2007) FBWMA Phase I Ecological Assessment [Available Online]
[9] UDWQ (2014) Integrated Report characterized SAV condition in impounded wetlands. Available Online

Table 3. Fringe wetland indicator ratings and rankings

Conservation Target: Fringe Wetlands

Key Attribute	Fringe Wetland Indicator	Poor	Fair	Good	Very Good	Current Ranking			
						Bear	Ogden	Farming-ton	GSL
Hydrologic Regime	Flood timing & depth adequate to maintain multiple habitat types[10]	Brief or absent flooding over multiple years leads to dominance of mudflat or upland types		Annual flooding maintains a balance of five habitat types		Fair	Fair	Fair/ Good	Poor/ Fair
Chemical Regime	Substances remain below concentrations harmful to aquatic life[11]	Substances at concentrations that are harmful to aquatic life		Ambient concentrations of toxic substances below thresholds harmful to aquatic life		Good	Good	Good	Good
Nutrient regime	Soil & water nutrient bioavailability[12] favor native plant community	Nitrogen & phosphorus concentrations in the highest 75th percentile for wetland type; large algal mats		Nitrogen & phosphorus concentration in the lowest 50th percentile for that wetland type; no large algal mats		Unknown	Good	Fair	Fair

[10] BRMBR Habitat Management Plan (2004) has guidance on flooding depth and timing for multiple habitat types [Available Online]. UDWQ (2018) Willard Spur summary describes habitat type changes caused by hydrologic isolation [Available Online].
[11] Utah Administrative Code R317 Table 2.14.2 lists toxic substance criteria for aquatic life. Available Online.
[12] UDWQ (2016) Fringe Wetland Report shows the summary statistics of nitrogen and phosphorus concentration from a survey of fringe wetlands (Table 17). Available Online.

Key Attribute	Fringe Wetland Indicator	Poor	Fair	Good	Very Good	Current Ranking			
						Bear	Ogden	Farming-ton	GSL
Macro-invertebrates	Healthy macroinvertebrate community[13] supports nested targets; follows seasonal dynamics & salinity gradients	Low diversity of functional feeding groups		High diversity of functional feeding groups		Unknown	Unknown	Unknown	Unknown
Plants	Dominance of native plant species[14]	Native species cover <50%		Native species cover >75% of vegetated area		Poor/ Fair	Poor/ Fair	Poor/ Fair	Poor/ Fair
Size	Wetland area below 4,218 ft MSL adequate to support nested targets[15]	Decreased acreage below 4,218 ft MSL		Adequate annually flooded acreage below 4,218 ft. MSL		Good	Good	Good	Good

[13] UDWQ (2016) Fringe Wetland Report lists the macroinvertebrate taxa found in fringe wetlands (Table 10 and 11). Available Online.
[14] UDWQ (2016) Fringe Wetland Report shows the relative cover of invasive plant species in fringe wetlands (Figure 5). Available Online.
[15] GSL Wetland CAP (2015) suggested 8,000-11,000 acres was indicative of good conditions and <6,000 acres indicated poor conditions. Available Online

Table 4. Playa/mudflat wetland indicator ratings and rankings

Conservation Target: Playa/Mudflats

Key Attribute	Indicator	Poor	Fair	Good	Very Good	Current Ranking			
						Bear	Ogden	Farming-ton	GSL
Hydrologic regime	Patterns of flooding & drying supportive of nested target needs [16]	Multiple years of no flooding or extended deep (>7 inches) flooding during spring & fall		In most years, shallow (<7 inches) early spring ponding or saturation followed by drawdown		Poor	Poor	Poor	Poor
Chemical Regime	Toxic substances in soils remain below concentrations harmful to aquatic life[17]	Substances at concentrations harmful to aquatic life		Ambient concentrations of toxic substances at or below harmful thresholds		Fair	Fair	Fair	Fair
Chemical Regime	Salinity within a range supportive of nested target's food web	Hypersaline conditions caused by lack of water that exceed macro-invertebrate tolerance (excludes rising GSL)		Brackish to saline soil salinity		Poor	Unknown	Unknown	Poor
Nutrient regime	Nutrient cycling between soil, water, plants, macroinvertebrates & birds	Nitrogen & phosphorus accumulate in soils		Nitrogen & phosphorus regularly cycle from water to soils to plants, macro-invertebrates, & birds		Unknown	Unknown	Unknown	Unknown

[16] 2015 GSL Wetland CAP suggested May flooding was most indicative of a healthy hydrologic regime. Available Online

[17] The Environmental Protection Agency has developed Ecological Soil Screening Levels of some toxic contaminants. Available Online

Key Attribute	Indicator	Poor	Fair	Good	Very Good	Current Ranking			
						Bear	Ogden	Farming-ton	GSL
Macro-invertebrates	Adequate macroinvertebrate biomass(g/m^2) to support nested targets	Low biomass of desirable functional groups		Adequate biomass of desirable functional groups		Good	Fair	Good	Good
Plants	Vegetated area dominated by native halophytes[18]	Increased species richness driven by invasive species		A few (≤3) native halophytes dominant, especially *Salicornia rubra, Sueada calceoliformis, & Allenrolfia occidentalis*		Good	Fair	Good	Fair
Plants	Bare ground & vegetated areas present	Loss of dynamic condition, playa/mudflats never vegetated or lost to constantly expanding Phragmites		In most years area is dominated by bare ground with sparse, fringing vegetation; periodic expansion of native halophytes		Good	Good	Good	Good
Size	Adequate mudflat habitat area near fresh or brackish water & higher elevation playa refugia [19]	Decreased area & connectivity inadequate to support shorebird nested target		Adequate shallow gradient mudflat area between fringe wetlands & GSL open water & playa habitat to support shorebird nested target		Good	Good	Good	Good

[18] Wetland Plants of Great Salt Lake (2017) lists native and introduced playa species. Available Online

[19] GSL Wetland CAP (2015) suggested 18,000 - 23,000 acres was adequate for good conditions and <13,000 acres indicated poor condition. Available Online

Table 5. Strategies and Objectives

#	Objectives, Strategic Actions with Steps, and Indicators
Objective	**1. Maintain sufficient flow (acre/feet) and a "minimum dynamic area" (acres) of wetlands and bays so that they are in "Good" condition.**
Strategic action	Define "Good" condition of wetland health based upon key ecological attributes for the wetland targets
Strategic action	Understand the value of water for ecosystem services and the value of a healthy Great Salt Lake and watershed (e.g., using a model)
Strategic action	Utilize existing water and create new avenues to get water to the Great Salt Lake
Strategic action	Provide financial incentives for water users to conserve and sell/lease water
Strategic action	Persuade decision-makers to support sufficient water in Great Salt Lake using various tools and approaches (e.g., models, other saline lakes dying, air quality)
Objective	**2. Decrease Phragmites cover around Great Salt Lake by 50% (~13,000 acres) by 2028.**
Strategic action	Create of a Phragmites "czar" (Department of Natural Resources)
Strategic action	Outreach and education (Department of Natural Resources & USU Extension)
Strategic action	Improve access to existing funds (interagency)
Strategic action	Follow treatment BMPs (cattle, herbicide) on 1300 acres/year (all landowners)
Strategic action	Annual coordination meeting (czar)
Strategic action	Monitor and evaluate (universities)

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Appendix B. Wetland Water Quality Standards Benchmarking

Table of Contents

What's included in this Appendix

This appendix includes details from the state and tribal water quality standards (WQS) used for benchmarking in order to meet the objectives of Utah Department of Environmental Quality's FY16-17 Wetland Program Development Grant. Specifically, benchmarking was done to gather background materials on how wetland WQS can be applied in Utah.

Scope: this appendix summarizes the WQS for all states, regions, and tribes that mention wetlands in any identifiable form in their WQS. Wetland inclusion in WQS was determined by accessing electronic versions of all state and EPA-approved tribal statutes and using the 'Find' function to search for references to 'wetlands' or 'marsh.' The final tally includes 35 states, 5 California regions, and 43 tribes. This appendix began with states mentioned in the Environmental Law Institute (2008) and Association of State Wetland Managers (Kusler and Christie 2012) reports. Approximately half the state rules detailed here are not listed in those reports and no reports assessed tribal wetland WQS comprehensively. It's likely that some wetland rules were developed recently enough wetland rules that they were not included in earlier lists of states with wetland water quality standards. In an effort to be comprehensive, all statutes that mentioned wetlands, regardless of how effectively wetlands are protected, are included. All published state and tribal statutes have been approved by the EPA, but it is not possible to learn from reading how effectively statutes are.

Contents: each state, region, and tribe has their own section within this appendix, which is organized first by states, then by tribes. Tribes are listed in alphabetical order of the states within which reservations are located. For each state or tribe, I have included a brief summary of WQS, a map of estimated National Wetland Inventory area, beneficial uses, narrative criteria, applicable antidegradation rules, definitions, and interesting bits of water quality standards. Most text is exact copies of rules; any commentary is included as *italicized text*. Links to electronic versions of statutes are included in the header of each section.

Interesting Bits

The useful, interesting, or unique parts of state and tribal water quality standards that may be relevant to Utah WQS.

Definitions

San Francisco Regional WQB – wetland definition - 40 CFR § 116.3+ "The Water Board recognizes that *wetlands frequently include areas commonly referred to* as saltwater marshes, freshwater marshes, open or closed brackish water marshes, mudflats, sandflats, unvegetated seasonally ponded areas, vegetated shallows, sloughs, wet meadows, playa lakes, natural ponds, vernal pools, dike baylands, seasonal wetlands, floodplains, and riparian woodlands

Classification

San Francisco Bay: 34 named marsh areas and beneficial uses

Nebraska – Wetland classification – overflow and isolated wetlands – each class has different attainable uses. (7-003)

Hawaii – Classification by location in or out of land reserves, then fresh or coastal waters, then elevation (low/high); use USACE definition for permitting activities.

Uses

North Coast Regional WQB – wetland and water quality enhancement beneficial uses; *Wetland Habitat* use to preserve and enhance wetland functions and habitat.

Arizona – Aquatic and Wildlife (*effluent-dependent water*) A&Wedw beneficial use specifies the use of acute criteria for A&Wedw waters that are intermittent and temperature and dissolved oxygen criteria

West Virginia – cannot consider *waste assimilation* and transport a designated use

Wyoming – Class 3D *Effluent dependent* waters which are known to support communities of aquatic life other than fish and where the existing aquatic habitat would be significantly reduced in terms of aerial extent, habitat diversity or ecological value if the effluent flows are removed of reduced. Class 3D waters are protected to the extent that the existing aquatic community, habitat and other designated uses are maintained and the water quality does not pose a health risk or hazard to humans, livestock or wildlife.

Washington – distinguish between designated uses that are relevant to water quality standards and 'existing beneficial uses' that are *ecological functions* wetlands provide

Criteria

Arizona – *Algae* and Lake Nutrient Narrative Criteria

A. A surface water shall not contain pollutants in amounts or combinations that:

6. Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or that impair recreational uses;

Los Angeles Regional WQB – narrative hydrology and habitat criteria - Hydrology – *Natural hydrologic conditions* necessary to support the physical, chemical, and biological characteristics present in wetlands shall be protected to prevent significant adverse impacts on:

- Natural temperature, pH, dissolved oxygen, and other natural physical/chemical conditions,
- Movement of aquatic fauna,
- Survival and reproduction of aquatic flora and fauna, and
- Water levels.

Habitat – Existing habitats and associated populations of wetlands fauna and flora shall be maintained by:

- Maintaining substrate characteristics necessary to support flora and fauna which would be present naturally,
- Protecting food supplies for fish and wildlife,
- Protecting reproductive and nursery areas, and
- Protecting wildlife corridors

Illinois – *dissolved oxygen* criteria for quiescent waters to maintain enough DO to support ecological functions

Nebraska – Ecology or community composition – 004.02B Biological Criteria. Any human activity causing water pollution which would cause a significant adverse impact to an identified "key species" is a violation of these Standards. [*List T&E wildlife species*]

New Mexico – E. *Plant Nutrients*: Plant nutrients from other than natural causes shall not be present in concentrations that will produce undesirable aquatic life or result in a dominance of nuisance species in surface waters of the state.

North Carolina – narrative standard criteria for *wetland hydrology* (15A NCAC 02B.0231.b.5), nutrients, and oxygen as 'regimes':

> Hydrologic conditions necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent adverse impacts on:
>
> (B) Natural water temperature variations
>
> (C) The chemical, nutrient and dissolved oxygen regime of the wetland;
>
> (E) The pH of the wetland; and
>
> (F) Water levels or elevations

Washington – procedures for applying water quality criteria to wetlands (similar to Wisconsin)

> 173-201A-260(3)(h)(i) Water quality in wetlands is maintained and protected by maintaining the hydrologic conditions, hydrophytic vegetation, and substrate characteristics necessary to support existing and designated uses.

Colorado – pH change – (b) for surface waters in wetlands;

> (i) produce color, odor, *change in pH*, or other conditions in such a degree as to create a nuisance or harm water quality dependent functions or impact any undesirable taste to significant edible aquatic species of the wetland; or

Hawaii – pH criteria – deviation of 0.5 units, wider acceptable range

Hawaii – *Nuisance organisms* – Hawaii - §11-54-4 Basic water quality criteria applicable to all waters.

> (a) All waters shall be free of substances attributable to domestic, industrial, or other controllable sources of pollutants, including:
>
> (5) Substances or conditions or combinations thereof in concentrations which produce undesirable aquatic life

Rhode Island – definition of *undesirable nuisance species*: "means any plant or animal aquatic species which becomes so numerous due to pollutants or physical or hydrological modifications that it interferes with, or indicates an impairment of, the designated use(s) of a waterbody.

Florida – Application of standards for Class III waters (especially *numeric phosphorus criteria*) within the Everglades Protection Area

Missouri - "Water quality criteria are established to protect assigned beneficial uses. However, traditional water quality parameters in wetlands such as *pH, temperature, dissolved oxygen, ammonia, chloride, and conductivity* may naturally vary outside accepted ranges for other surface waters. Water quality criteria for specific wetlands or wetland complexes, except numerical criteria for toxic substances [...], petroleum oil [...], and residual chlorine [...], shall be based on natural background values for traditional water quality parameters. However, these criteria shall be no more stringent than those associated with the Class B Warmwater Aquatic Life Classification or the General Criteria for Aquatic Life of Chapter 4 [....]. "

West Virginia – list numeric criteria not applicable to wetlands (pH, dissolved oxygen, temperatures and iron); allow pH higher than 9.0 due to photosynthetic activity

Chehalis – *seasonal* natural water quality exceptions (Colville as well)

Antidegradation

Wisconsin – Wetlands in areas of special natural resource interest: (4) unique and significant wetlands identified in special area management plans, special wetland inventory studies, advanced delineation and identification studies and areas designated by the EPA under §404(c). (8) State and federal fish and wildlife refuges and fish and wildlife management areas

Umatilla – Antidegradation Tier 3 flow protection: "the Department may require water quality controls, maintenance of natural flow regimes..."

Santa Clara Pueblo – antidegradation mentions §404 and no-net-loss goal

Water Availability

San Francisco Regional WQB - *Wetland hydrology provision* (4.23.3) - Hydrology is a major factor affecting the beneficial uses of wetlands. To protect the beneficial uses and water quality of wetlands from impacts due to hydrologic modifications, the Water Board will carefully review proposed water diversions and transfers (including groundwater pumping proposals) and require or recommend control measures and/or mitigation as necessary and applicable.

San Francisco Bay: support using *wastewater* to create new wetland habitat so long as beneficial uses are fully protected

Louisiana – the only wetlands mentioned in water quality rules are those receiving waste water; policy on assessing discharges includes a section on *adding nutrients* to wetlands that need them

Nebraska – when water is not available in wetlands: "Numerical criteria which rely on water in order to be measured, shall not be deemed applicable during periods when water is not present." (7-002)

Nebraska – Water rights and uses – "Wetland uses not intended to conflict with irrigation/DNR beneficial uses." (7-004.02))

Wyoming – The department shall, after review and conference with the State Engineer, make recommendations to the State Engineer concerning proposed new diversions which could cause violations of these regulations.

Hopi – discharges must meet criteria during low or no-flow periods

Kalispel – narrative standards is the only applicable criteria during low flow

States and tribes with no wetland standards

Twenty-three states do not have designated uses, water quality criteria, or antidegradation rules applicable to wetlands. Sixty-two tribal reservations or pueblos, of 695 total reservations, have applied to administer their own water quality standards. Forty-two of those tribes have developed standards relevant to wetlands. The tribes and states without wetland water quality standards are listed below with any interesting pieces their standards did contain.

Alaska – no mention of wetlands or marshes in water quality code. Alaska has separate fresh and marine aquatic life/wildlife subclasses in their waterbody classification.

Arkansas – no mention of wetlands or marshes in water quality code.

Central Valley Region (CA) - has no Wetland WQS, but mentions wetland water supply channels and managed wetlands extensively in their plans (primarily with regard to implementing methyl-mercury and salt management plans).

Georgia – wetlands mentioned only in waters of the state definition. Classified waters do not included associated standing waters and there are no antidegradation rules applicable to wetlands.

Idaho – wastewater treatment wetlands, which are not subject to point source standards, are the only wetlands in Idaho code. Wetlands are not included as waters of the state.

Indiana – water quality code does not mention wetlands.

Kentucky – wetlands only mentioned in definition of waters of the state. No wetlands are classified and no uses apply to wetlands.

Mississippi – wetlands mentioned only as being excluded from ephemeral waters classification

Montana – no mention of wetland or marsh; classifications for seasonal and semi-permanent lakes, ephemeral streams; have done a lot of wetland assessment work

New York – no wetland definition or mentions except as potentially important waters of human health or ecological interest addressed in different state titles

Oklahoma – marshes included in 'waters of the state' definition but there is no other mention of wetlands.

Oregon – wetlands only mentioned as potential features of storm water facilities

South Carolina – no mention of wetlands

Tennessee – wetlands only mentioned as indicators of wet weather conveyance; aquatic habitat use is based on flow

Blackfeet Tribe (MT) – has been granted authority to administer a standards program (2012), no approved standards at this time.

Confederated Tribes of the Goshute Reservation (UT, NV) – application to administer a standards program (TAS) under review (2017-06-15).

Cortina Band of Wintun Indians (CA) – granted authority to administer a standards program (2016-04-07), no approved standards at this time.

Dry Creek Rancheria Band of Pomo Indians (CA) – granted authority to administer a standards program (2011-10-17), no approved standards at this time.

Eastern Bank of Cherokee Indians (NC) – granted authority to administer a standards program (2015-01-26), no approved standards at this time.

Gila River Indian Community (AZ) – application to administer a standards program (TAS) under review (2017-02-23).

Havasupai Tribe (AZ) - granted authority to administer a standards program (2015-01-26), no approved standards at this time.

Morongo Band of Mission Indians (CA) – application to administer a standards program (TAS) approved (2018-04-03)

Pala Band of Mission Indians (CA) – application to administer a standards program (TAS) approved (2016-04-19)

Pawnee Nation (OK) – application to administer a standards program (TAS) approved (2004-11-04); standards will cover riparian wetlands of some rivers

Quinault Indian Nation (WA) – application to administer standards program (TAS) approved (2018-09-20)

Rincon Band of Luiseno Indians (CA) – application to administer standards program (TAS) approved (2018-04-03)

Shoshone Tribe of Duck Valley (NV) - application to administer standards program (TAS) under review

Shoshone-Bannock Tribes (ID) - application to administer standards program (TAS) approved (2008-09-05)

Southern Ute Indian Tribe (CO) - application to administer standards program (TAS) approved (2018-03-28)

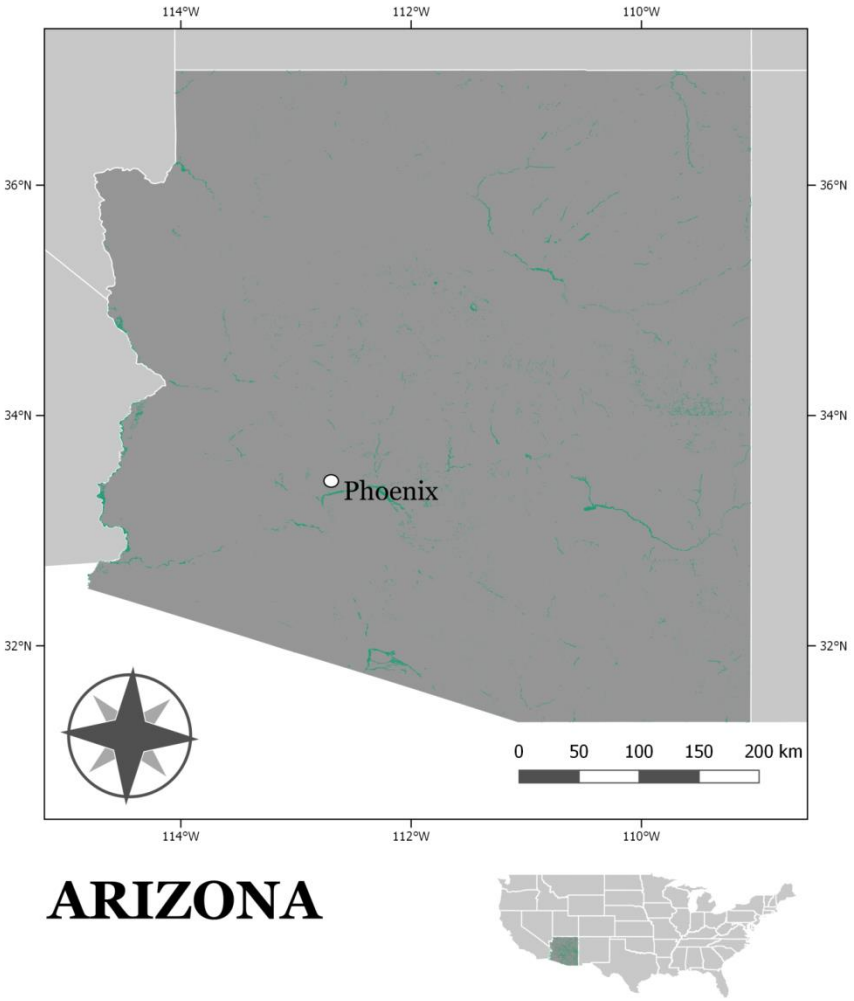
Tulalip Tribes (WA) - application to administer standards program (TAS) approved (1996-05-09)

Twenty-Nine Palms (CA) – No wetlands on tribal reservation

Walker River Paiute Tribe (NV) - application to administer standards program (TAS) approved (2016-02-29)

Arizona

Arizona does not have a wetland-specific beneficial use, but does include "adjacent wetlands" in the definition of surface waters and mentions Arizona-specific wetland types. Beneficial uses for aquatic and wildlife address ephemeral waters and effluent-dependent waters. Some named wetlands have assigned uses and site-specific standards.



Arizona has 269,788 acres of National Wetland Inventory wetlands, shown in green.

Beneficial Uses –R18-11-104

Aquatic and wildlife (warm water) (A&Ww) – means the use of a surface water by animals, plants, or other warm-water organisms, generally occurring at an elevation less than 5000 feet, for habitation, growth, or propagation.

Aquatic and wildlife (ephemeral) (A&We) – means the use of an ephemeral water by animals, plants, or other organisms, excluding fish, for habitation, growth, or propagation

Aquatic and wildlife (effluent-dependent water) (A&Wedw) – Means the use of an effluent-dependent water by animals, plants, or other organisms for habitat, growth, or propagation.

Narrative Standard - R18-11-108 – Narrative Water Quality Standards

A. A surface water shall not contain pollutants in amounts or combinations that:

1. Settle to form bottom deposits that inhibit or prohibit the habitation, growth, or propagation of aquatic life;

2. Cause objectionable odor in the area in which the surface water is located;

3. Cause off-taste or odor in drinking water;

4. Cause off-flavor in aquatic organisms;

5. Are toxic to humans, animals, plants, or other organisms;

6. Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or that impair recreational uses;

7. Cause or contribute to a violation of an aquifer water quality standard prescribed in R18-11-405 or R18-11-406; or

8. Change the color of the surface water from natural background levels of color.

B. A surface water shall not contain oil, grease, or any other pollutant that floats as debris, foam, or scum; or that causes a film or iridescent appearance on the surface of the water; or that causes a deposit on a shoreline, bank, or aquatic vegetation. The discharge of lubricating oil or gasoline associated with the normal operation of a recreational watercraft is not a violation of this narrative standard.

C. A surface water shall not contain a discharge of suspended solids in quantities or concentrations that interfere with the treatment processes at the nearest downstream potable water treatment plant or substantially increase the cost of handling solids produced at the nearest downstream potable water treatment plant.

D. A surface water shall not contain solid waste such as refuse, rubbish, demolition or construction debris, trash, garbage, motor vehicles, appliances, or tires.

E. A wadeable, perennial stream shall support and maintain a community of organisms having a taxa richness, species composition, tolerance, and functional organization comparable to that of a stream with reference conditions in Arizona.

**There is an additional Narrative Nutrient Criteria for Lakes and Reservoirs (R18-11-108.03) with criteria for chlorophyll-a, blue green algae, and dissolved oxygen/pH, phosphorus and nitrogen.*

Antidegradation – no wetland-specific language

Wetland Definition – 40 CFR § 116.3 definition

Definitions

"Surface water" means a water of the United States and includes the following:

b. An interstate water, including an interstate wetland

c. All other waters, such as an intrastate lake, reservoir, natural pond, river, stream (including an intermittent or ephemeral stream), creek, wash, draw, mudflat, sandflat, wetland, slough, backwater, prairie pothole, wet meadow, or playa lake, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce.

f. A wetland adjacent to a surface water identified in subsections (41) (a) through (e)

Tributaries; Designated Uses (R18-11-105)

The following water quality standards apply to a surface water that is not listed in Appendix B but that is a tributary to a listed water.

1. The aquatic and wildlife (ephemeral) and partial-body contact standards apply to an unlisted tributary that is an ephemeral water.

2. The aquatic and wildlife (cold water), fully-body contact, and fish consumption standards apply to an unlisted tributary that is a perennial or intermittent surface water and is above 5000 feet in elevation.

3. The aquatic and wildlife (warm water), full-body contact, and fish consumption standards apply to an unlisted tributary that is a perennial or intermittent surface water and is below 5000 feet in elevation.

Effluent-Dependent Waters (R18-11-113)

The Director classifies surface waters as effluent-dependent by rule; must use acute criteria for intermittent discharges

Numeric Standards *for ephemeral and effluent-dependent aquatic and wildlife uses*

Increase in ambient water temperature due to thermal discharge (3.0^0C instead of 1)

Dissolved oxygen (edw) 3.0 mg/l before sunset, 1.0 mg/l sunset to sunrise

Natural Background (R18-11-119)

Where the concentration of a pollutant exceeds a water quality standard and the exceedance is not caused by human activity but is due solely to naturally-occurring conditions, the exceedance shall not be considered a violation of the water quality standard.

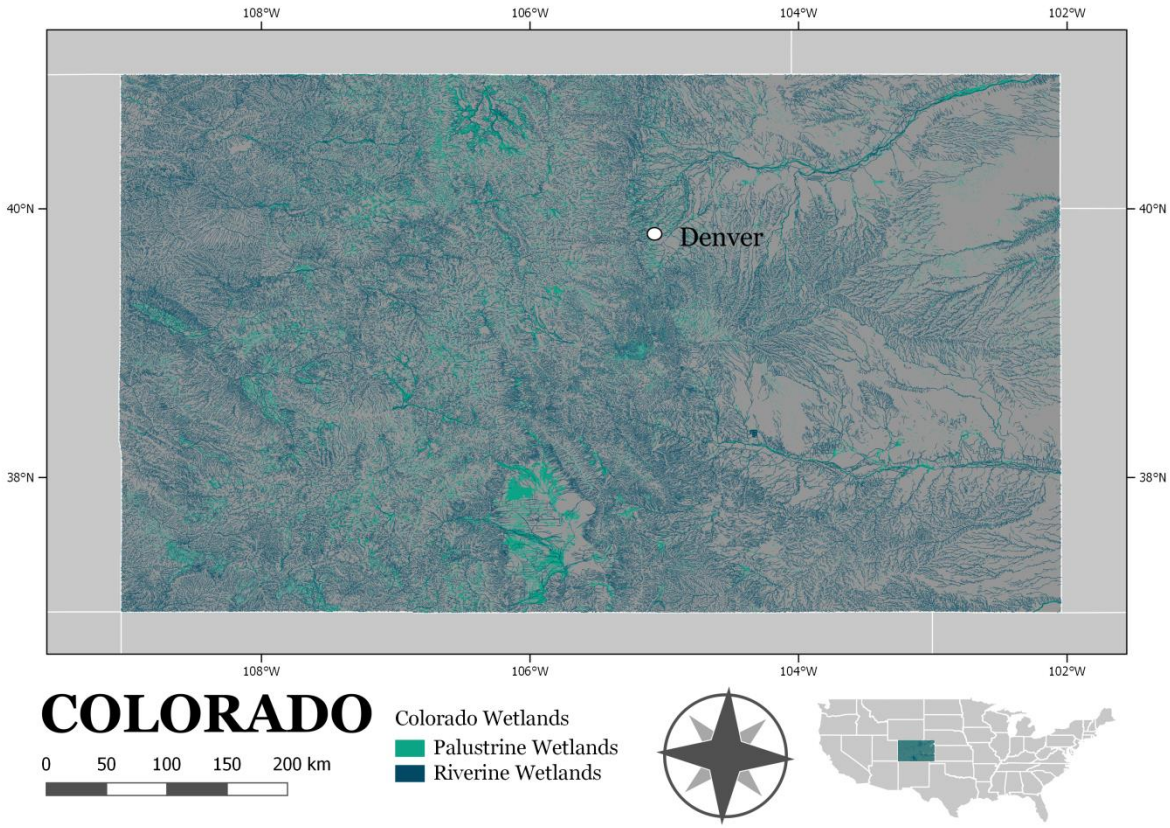
Wetlands/Marshes with Designated Uses (Appendix B) & Site-Specific Standards (Appendix C)

Topock Marsh – Shallow Lake, aquatic and wildlife (warm (A&Ww), full-body contact (FBC), domestic water source (DWS), fish consumption (FC), crop irrigation (Agl), livestock irrigation (AgL)

Yuma East Wetlands – Selenium and total residual chlorine site-specific criterion

Colorado

Colorado has 3 types of standards applicable to wetlands: narrative standards for all wetlands and created wetlands (like impounded wetlands); numeric criteria of surface water segments apply to tributary and compensatory wetlands; and site-specific standards to be developed for all wetlands. Wetland classification identifies 13 functions wetlands could provide. Only 2 of 5 narrative standard parts apply to wetlands. Specify that water rights won't be infringed on by any water quality requirements (link to water rights/water quality MOU included). Standards for tributary wetlands did not hold up in court.



Colorado has 666,941 acres of riverine wetlands and 1,000,220 acres of freshwater ponds and marshes according to the National Wetland Inventory

Beneficial Use – Classification 31.13

(e) Wetlands:

(i) The provisions of this section do not apply to constructed wetlands

(ii) Compensatory wetlands shall have, as a minimum, the classifications of the segment in which they are located.

(iii) Created wetlands shall be considered to be initially unclassified, and shall be subject only to the narrative standards set forth in section 31.11, unless and until the Commission adopts the 'wetlands' classification described below and appropriate numeric standards for such wetlands.

(iv) Tributary wetlands shall be considered tributaries of the surface water segment to which they are most directly connected and shall be subject to the interim classifications as follows: such wetlands shall be considered to have the same classifications as the segment of which they are a part, unless the "wetlands" classification and appropriate site-specific standards have been adopted to protect the

water quality dependent functions of the wetlands. Interim numeric standards for these wetlands are described in section 31.7(1) (b) (iv).

(v) The Commission may adopt a "wetlands" classification based on the functions of the wetlands in question. Wetland functions that may warrant site-specific protection include ground water recharge or discharge, flood flow alteration, sediment stabilization, sediment or other pollutant retention, nutrient removal or transformation, biological diversity or uniqueness, wildlife diversity or abundance, aquatic life diversity or abundance, and recreation. Because some wetland functions may be mutually exclusion (e.g., wildlife abundance, recreation) the functions to be protected or restored will be determined on a wetland-by-wetland basis, considering natural wetland characteristics and overall benefits to the watershed. The initial adoption of a site-specific wetlands classification and related standards to replace the interim classifications and standards described above shall not be considered a downgrading.

Rationale – everything has the interim standard until the Commission determines what functions a wetland actually provides; will remove standards associated with functions wetlands don't provide (e.g., sensitive aquatic species) or add standards for unique functions. 3.1.13(1) (e) (v) use will be applied on a site-by-site basis.

Narrative Standard – Basic Standards Applicable to Surface Waters of the State 31.11

(1) Except where authorized by permits, BMPs, 401 certifications, or plans of operation approved by the Division or other applicable agencies, state surface waters shall be free from substances attributable to human-caused point source or nonpoint source discharge amounts, concentrations of combinations which:

(a) for all surface waters except wetlands;

(i) can settle to form bottom deposits detrimental to the beneficial uses. Depositions are stream bottom buildup of materials which include but are not limited to anaerobic sludges, mine slurry or tailings, silt, or mud; or

(ii) form floating debris, scum, or other surface materials sufficient to harm existing beneficial uses; or

(iii) produce color, odor, or other conditions in such a degree as to create a nuisance or harm existing beneficial uses or impart any undesirable taste to significant edible aquatic species or to the water; or

(iv) are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life; or

(v) produce a predominance of undesirable aquatic life; or

(b) for surface waters in wetlands;

(i) produce color, odor, change in pH, or other conditions in such a degree as to create a nuisance or harm water quality dependent functions or impact any undesirable taste to significant edible aquatic species of the wetland; or

(ii) are toxic to humans, animals, plants, or aquatic life of the wetland.

Numeric Standards (31.7.1)

(iv) Standards For Surface Waters In Wetlands

(A) Tributary wetlands to which the interim classifications referenced in section 31.13(1) (e) (iv) apply, shall be subject to the following interim standard:

(1) Until such time as the Commission adopts site-specific standards for the tributary wetland, water quality in the wetland shall be maintained for each parameter at whichever of the following levels is less restrictive:

(a) ambient quality, or

(b) that quality which meets the numeric standards (except for numeric standards for pH, dissolved oxygen, and any standard established for the protection of a domestic water supply use) of the tributaries of the surface water segment to which the wetland is most directly hydrologically connected. Where the applicable numeric standard is based on section 31.16, table III, of this regulation, the numeric standard applicable to the wetland may be implemented taking into account the water effect ratio of the pollutant.

(2) Ambient quality shall be determined in accordance with section 31.7(1) (b) (ii) and shall take into account the location, sampling date, and quality of all available data. Ambient quality shall be determined as of the time the first regulatory action is undertaken which requires the identification of water quality standards for wetlands. If available information is not adequate to otherwise determine or estimate ambient quality, the interim standard set forth in section 31.7(1) (b) (iv) (A) (1) (b) shall apply.

(B) Wetlands for which the Commission has adopted a site-specific "wetlands" classification described in section 31.13(1) (e) (v), shall be subject to numeric standards and designations adopted by the Commission. The Commission shall adopt any numeric standards and designations determined to be appropriate in view of the functions and values to be protected for the wetlands in question.

(C) Created wetlands shall be subject only to the narrative standards set forth in section 31.11, unless the Commission has adopted the wetlands classification and appropriate numeric standards. All created wetlands will have a use protected designation unless determined otherwise as a result of a site-specific hearing.

(D) Compensatory wetlands shall be subject to the standards of the segment in which they are located, unless the Commission adopts a wetlands classification and appropriate numeric standards.

(E) All other wetlands which are state waters shall be subject only to the narrative standards set forth in section 31.11, unless the Commission has adopted the wetlands classification and appropriate numeric standards.

(F) The issuance and use of site-specific or individual permits under section 404 of the Clean Water Act, is not precluded by the provisions of sections 31.7, 31.11 or 31.13, except as provided in the 401 certification process under section 25-8- 302, C.R.S.

(G) Wetlands water quality standards and classifications shall not be interpreted or applied in a manner that is inconsistent with sections 25-8-102(5) and 25-8-104, C.R.S.

Antidegradation – no wetland-specific language; Outstanding National Resource Waters in national wildlife refuges

Wetland definition – 40 CFR § 116.3 definition + definitions of created, constructed, and tributary wetlands

Water Rights. 31.27(A) (3) Standards

Considerable concern was expressed in the hearing regarding the potential impact of wetlands water quality standards on activities involving the exercise of water rights. As in all other areas of Colorado's water quality program, the potential for application of these standards in a manner detrimental to water rights is constrained by the provisions of section 25-8-104, C.R.S. However, in an effort to more directly alleviate concerns in this regard, the Commission has adopted new subsection 3.1.7(1) (b) (iv)(G), to clarify that wetlands water quality standards shall not be interpreted or applied in a manner that restricts the lawful exercise of water rights.

C.R.S 25-8-104 Memorandum of Understanding between the Colorado Water Quality Control Commission, Colorado State Engineer's Office, and the Colorado Water Conservation Board.

(1) No provision of this article shall be interpreted so as to supersede, abrogate, or impair rights to divert water and apply water to beneficial uses in accordance with the provisions of section 5 and 6 of article XVI of the constitution of the state of Colorado, compacts entered into by the state of Colorado, or provisions of articles 80 and 93 of title 37, C.R.S., or Colorado court determinations with respect to the determination and administration of water rights. Nothing in this article shall be construed, enforced, or applied so as to cause or result in material injury to water rights. The

general assembly recognized that this article may lead to dischargers choosing consumptive types of treatment techniques in order to meet water quality requirements. Under such circumstances, the discharger must comply with all of the applicable provisions of articles 80 to 93 of title 37, C.R.S., and shall be obliged to remedy any material injury to water rights to the extent required under the provisions of article 80 to 93 of title 37, C.R.S. The question of whether such material injury to water rights exists and the remedy therefor shall be determined by the water court. This section shall not be interpreted so as to prevent the issuance of a permit pursuant to sections 25-8-501 to 25-8-503 which is necessary to protect public health. Nothing in this article shall be construed to allow the commission or the division to require minimum stream flows or minimum water levels in any lakes or impoundments.

(2) The following criteria, in addition to those otherwise prescribed by law, shall apply to any policy, rule-making, adjudicatory, administrative, or executive decision of the water quality control commission or to any judicial decision related thereto:

(a) All state waters shall be presumed to be available for beneficial uses under and in accordance with the constitution and laws of the state; and a water right includes the right to divert as defined in section 37-92-103(7), C.R.S., the waters of the state for application of beneficial use.

(b) The commission or division shall not require instream flow for any purpose.

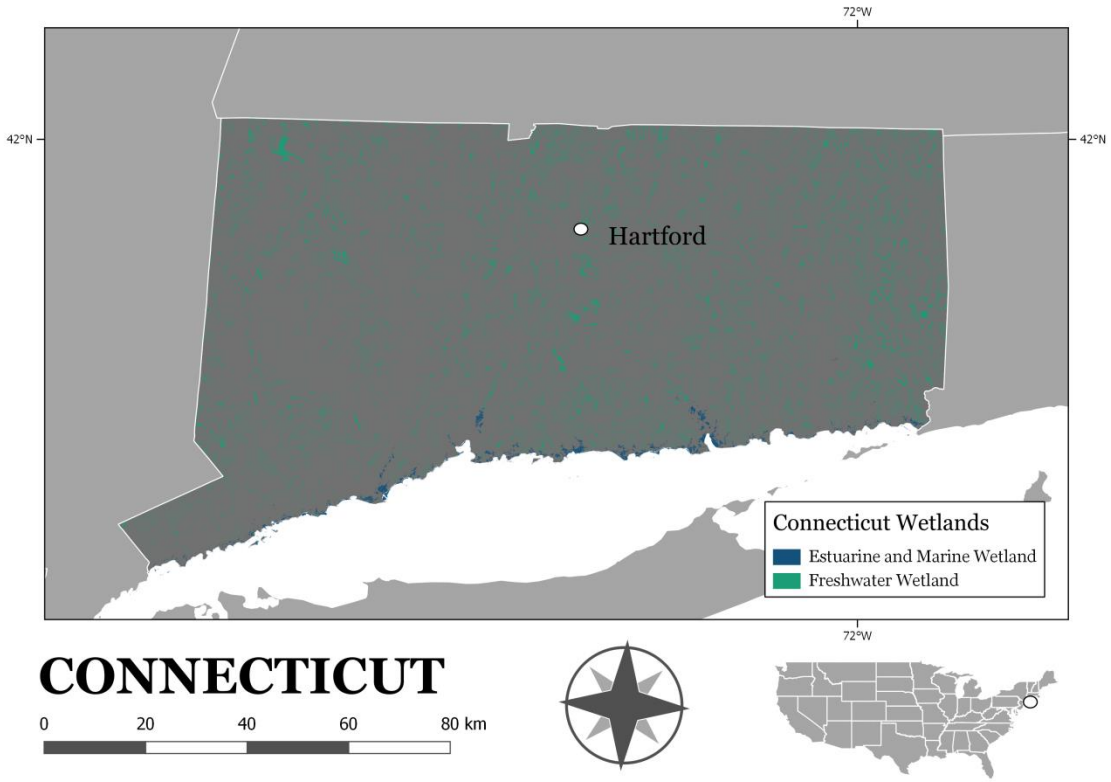
(c) Mixing zones in state waters shall be allowed in accordance with other provisions of this article in calculating the necessary degree of source pollutant control, so long as water rights are not materially injured.

(d) The commission and division shall consult with the state engineer and the water conservation board or their designees before making any decision or adopting any rule or policy which has the potential to cause material injury to water rights.

Mixing Zones – wetlands treated like lakes

Connecticut

Connecticut does not have uses or criteria specific to wetlands, but wetlands are included as surface waters of the state, antidegradation rules also address wetlands extensively. Rules regulating tidal and inland wetlands are separate parts of the Environmental Protection (Title 22a) code. Connecticut establishes the trophic status of lakes based on macrophytes and chlorophyll a.



Connecticut has 283,883 acres of wetlands according to the National Wetland Inventory.

Beneficial Uses *– no wetlands-specific uses, classifications on maps, not tables* – Sec. 22a-426-4.b-k

(b) Class AA Waters and Designated Uses: (A) existing or proposed drinking water supplies; (B) habitat for fish and other aquatic life and wildlife; (C) recreation; and (D) water supply for industry and agriculture.

(d) Class A Waters and Designated Uses: (1) habitat for fish and other aquatic life and wildlife; (2) potential drinking water supplies; (3) recreation; (4) navigation; and (5) water supply for industry and agriculture

(f) Class SA Waters and Designated Uses: (1) habitat for marine fish, other aquatic life and wildlife; (2) shellfish harvesting for direct human consumption; (3) recreation; (4) industrial water supply; and (5) navigation

(h) Class B Waters and Designated Uses: (1) habitat for fish and other aquatic life and wildlife; (2) recreation; (3) navigation; and (4) industrial and agricultural water supply

(j) Class SB Waters and Designated Uses: (1) habitat for marine fish, other aquatic life and wildlife; (2) commercial shellfish harvesting; (3) recreation; (4) industrial water supply; and (5) navigation

Narrative Standard – Sec. 22a-426-9(a) Surface Water Quality Criteria by Classification (*Class B*)

Dissolved Oxygen. Not less than 5 mg/l at any time.

Sludge deposits, solid refuse, floating solids, oils and grease, scum. None except for small amounts that may result from the discharge from a permitted waste treatment facility and none exceeding levels necessary to protect and maintain all designated uses.

Color. None which causes visible discoloration of the surface water outside of any designated zone of influence.

Suspended and settleable solids. None in concentrations or combinations which would impair the most sensitive designated use; none aesthetically objectionable; none which would significantly alter the physical or chemical composition of the bottom; and none which would adversely impact aquatic organisms living in or on the bottom sediments; shall not exceed 10 mg/l over ambient concentrations.

Silt or sand deposits. None other than of natural origin except as may result from normal agricultural, road maintenance, construction activity, dredging activity or discharge of dredged or fill materials provided all reasonable controls or Best Management Practices are used in such activities and all designated uses are protected and maintained.

Turbidity. Shall not exceed 5 NTU over ambient levels and none exceeding levels necessary to protect and maintain all designated uses. All reasonable controls or Best Management Practices are to be used to control turbidity.

Indicator bacteria. See Table 2A of this section.

Taste and Odor. None that would impair any uses.

pH. 6.5 – 8.0

Allowable Temperature Increase. There shall be no changes from natural conditions that would impair any existing or designated uses assigned to this Class and, in no case exceed 850 F, or in any case raise the temperature of surface water more than 40 F.

Chemical constituents. None in concentrations or combinations which would be harmful to designated uses. Refer to Table 3 of this section and sections 22a-426- 4(a)(5); 22a-426-4(a)(9); 22a-426-4(a)(9)(B); 22a-426-4(a)(11); 22a-426-4(l); 22a-426-4(m); 22a-426-9(a)(3); 22a-426-9(a)(4) and 22a426-9(a)(5) of the Regulations of Connecticut State Agencies.

Nutrients. The loading of nutrients, principally phosphorus and nitrogen, to any surface water body shall not exceed that which supports maintenance or attainment of designated uses.

Biological condition. Sustainable, diverse biological communities of indigenous taxa shall be present. Moderate changes, from natural conditions, in the structure of the biological communities, and minimal changes in ecosystem function may be evident; however, water quality shall be sufficient to sustain a biological condition within the range of Connecticut Biological Condition Gradient Tiers 1-4 as assessed along a 6 tier stressor gradient of Biological Condition Gradient (See section 22a-426-5 of the Regulations of Connecticut State Agencies).

Antidegradation *– High Quality Waters and Wetlands are Tier 1 and Tier 2 Waters.*

Tier 2 Antidegradation Evaluation and Implementation Review – [...] Under the following circumstances, the commissioner may determine that a proposed new or increased discharge or activity will not reasonably be expected to significantly lower water quality in high quality waters or wetlands:

(A) The discharge or activity is temporary, occurring over a period of days or months, not years;

(B) Water quality in the receiving water will be equal to or better than that which existed prior to commencement of the discharge or activity; or

(C) For new or increased discharges or activities resulting from stormwater the first inch of rainfall is not discharged to a surface water body and Best Management Practices deemed necessary to protect and maintain designated uses and meet state Standards and Criteria are implemented.

Wetland Definition - "Wetlands" means land, including submerged land, not regulated pursuant to Sections 22-7h to 22-7o inclusive of the General Statutes, as amended, which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial, and flood plain by the National Cooperative Soil Survey (as may be amended from time to time) of the U.S. Soil Conservation Service. [*from Title 22a-39-3 Inland Wetlands and Water Courses Regulations*]

Definitions - "Surface Water" means the waters of Long Island Sound, its harbors, embayments, tidal wetlands and creeks; rivers and streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs, federal jurisdictional wetlands, and other natural or artificial, public or private, vernal or intermittent bodies of water. Surface water does not include ground water

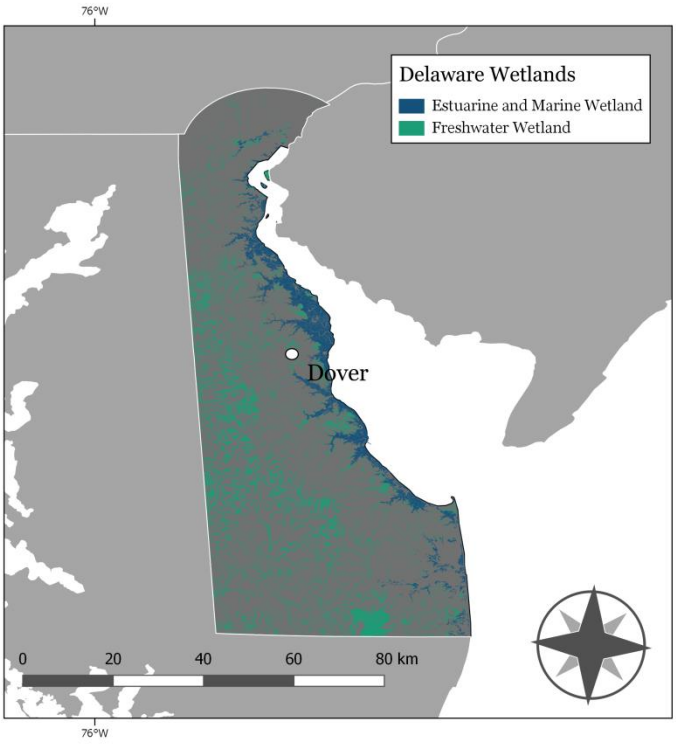
Tidal Wetlands [Connecticut 22a-30-1] Tidal Wetlands Regulations of the Connecticut Deparatment of Environmental Protection – *regulates activities in tidal wetlands through a permit to ensure impacts are avoided to the extent possible, recreational and navigational uses are protected, erosion and sedimentation are avoided, marine fisheries, shellfishering, and wildlife are protected, and hurricanes and natural disaster impacts are considered.*

Inland Wetlands and Water Courses [Connecticut 22a-39-1] – *rules for permitting agriculture and construction impacts on inland wetlands are water courses. Includes public meeting requirements.*

Discharges – Sec 22a-426-4.a.9.C Evaluation of a discharge or discharge of dredged or fill material to wetlands shall include consideration of the manner in which such wetlands support existing and designated uses and protect and maintain downstream water quality.

Delaware

Delaware has a Wetland Dominated Tidal River Designated Uses applicable to one river, which supports native fish adapted to natural, intermittent low oxygen conditions. Waters of exceptional recreational or ecological significance (a uses classification and antidegradation category) may have significant wetland natural areas, regardless of water quality. Wetlands, including riparian and lacustrine wetlands are waters of the state. Antidegradation review assesses impacts to wetland nutrient assimilation and other services. Seasonal nitrogen and phosphorus criteria apply during the submerged aquatic vegetation growth season.



Delaware has 249,022 acres of wetlands according to the National Wetland Inventory.

Beneficial Uses – 3.0 Stream Basins and Designated Uses.

"Wetland Dominated Tidal River Designated Use" applies to the Murderkill River from the Route 1 Bridge to the confluence with Delaware Bay which supports the survival, growth and propagation of balanced indigenous populations of fish inhabiting the river and adapted to intermittent low dissolved oxygen caused by natural processes during the period May 16 through September 30.

Waters of exceptional recreational or ecological significance (ERES): Waters which are important, unique, or sensitive from a recreational and/or ecological perspective, but which may or may not have excellent water quality. Such waters shall normally have regional significance with respect to recreational use (fishing, swimming and boating), or have significant or widespread riverine, riparian, or wetland natural areas.

Narrative Standard – 4.0 Criteria to Protect Designated Uses

4.1 All surface waters of the State (except as detailed in Sections 7.0 and 8.0) shall meet the following minimum criteria:

4.1.1. Waters shall be free from substances that are attributable to wastes of industrial, municipal, agricultural or other human-induced origin. Examples include but are not limited to the following:

4.1.1.1. Floating debris, oil, grease, scum, foam, or other materials on the water surface that may create a nuisance condition, or that may in any way interfere with attainment and maintenance of designated uses of the water,

4.1.1.2. Settleable solids, sediments, sludge deposits, or suspended particles that may coat or cover submerged surfaces and create a nuisance condition, or that may in any way interfere with attainment and maintenance of designated uses of the water,

4.1.1.3. Any pollutants, including those of a thermal, toxic, corrosive, bacteriological, radiological, or other nature, that may interfere with attainment and maintenance of designated uses of the water, may impart undesirable odors, tastes, or colors to the water or to aquatic life found therein, may endanger public health, or may result in dominance of nuisance species.

Antidegradation – impacts considered in permitting discharges (5.6.1.4.3): Impacts of pollutants on aquatic ecosystem diversity, productivity, and stability. Such impacts may include, but are not limited to, loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce water energy […]

Waters of exceptional recreational or ecological significances (ERES): Waters which are important, unique, or sensitive from a recreational and/or ecological perspective, but which may or may not have excellent water quality. Such waters shall normally have regional significant with respect to recreational use (fishing, swimming and boating), or have significant or widespread riverine, riparian, or wetland natural areas.

Wetland Definition – 40 CFR §116.3

Definitions – "Waters of the State" means:

All surface waters of the State including but not limited to:

Waters which are subject to the ebb and flow of the tide, including but not limited to estuaries, bays, and the Atlantic Ocean;

All interstate waters, including interstate wetlands;

All other waters of the State, such as lakes, rivers, streams (including intermittent and ephemeral streams), drainage ditches, tax ditches, creeks, mudflats, sandflats, wetlands, sloughs, or natural or impounded ponds;

All impoundments of waters otherwise defined as waters of the State under this definition;

Wetlands adjacent to waters (other than waters that are themselves wetlands) identified above;

Numeric Criteria – The Murderkill River from the Route 1 Bridge to the confluence with Delaware Bay has special dissolved oxygen criteria in subsection 4.5 that are protective of the wetland dominated tidal river designated use.

4.5.2.5 The Murderkill River from the Route 1 Bridge to the Confluence with the Delaware Bay

4.5.2.5.1 For the period from May 16 through September 30:

4.5.2.5.1.1 Daily average shall not be less than 3.0 mg/L

4.5.2.5.1.2 One Hour Minimum: one hour average shall not be less than 1.0 mg/L

4.5.2.5.2 For the period October 1 through May 15, applicable criteria for all waters of the State shall apply.

Nutrients – 4.5.8.Nutrient overenrichment is recognized as a significant problem in some surface waters of the State.

4.5.8.1 It shall be the policy of this Department to minimize nutrient input to surface waters from point and human induced non-point sources.

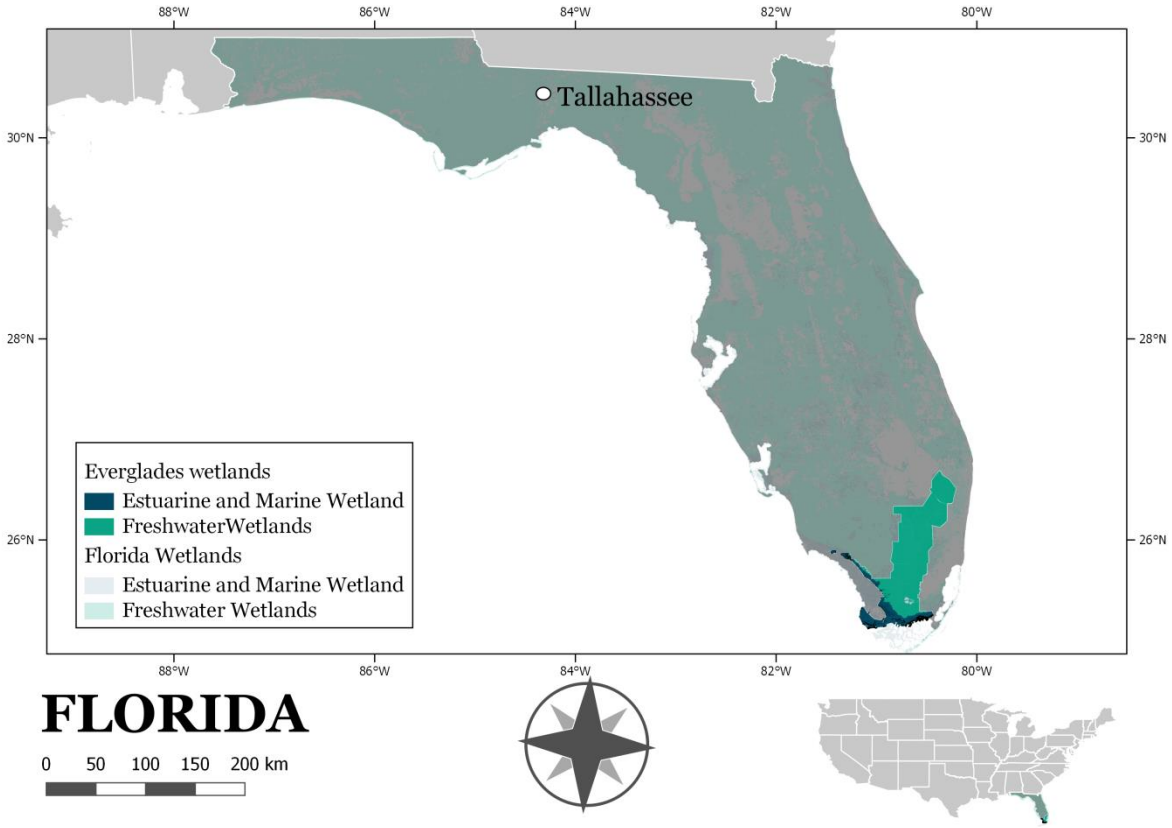
4.5.8.2 The types of, and need for, nutrient controls shall be established on a site-specific basis. Nutrient controls may include, but shall not be limited to, discharge limitations or institution of best management practices.

4.5.8.3 For lakes and ponds, controls shall be designed to eliminate overenrichment.

4.5.8.4 For tidal portions of the stream basins of Indian River, Rehoboth Bay, and Little Assawoman Bay, controls needed to attain submerged aquatic vegetation growth season (approximately March 1 to October 31) average levels for dissolved inorganic nitrogen of 0.14 mg/L as N, for dissolved inorganic phosphorus of 0.01 mg/L as P, and for total suspended solids of 20 mg/L shall be instituted.

Florida

Florida does not have any specific standards for wetlands (and explicitly excludes them from definitions of lakes and estuaries). However, Florida does have site specific interpretations of phosphorus standards for Everglades Protection Area and special protections for Outstanding Florida Waters and outstanding national resource waters (all of which include large wetland areas). Florida has rules for numeric interpretations of narrative nutrient criteria in other areas as well.



1,775,004 acres of freshwater, estuarine, and marine wetlands are located within the Everglades Protection Area (in dark blue and green), but that only represents 15% of Florida's wetland acreage according to the National Wetland Inventory.

Beneficial Uses *– none for wetlands except Everglades* – 62.302.400 Classification of Surface Waters, Usage, Reclassification, Classified Waters

Class III – Fish Consumption; Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife

Narrative Standard – 62-302.500 Surface Waters: Minimum Criteria, General Criteria.

(1) Minimum Criteria. All surface waters of the State shall at all places and at all times be free from:

(a) Domestic, industrial, agricultural, or other man-induced non-thermal components of discharges which, alone or in combination with other substances or in combination with other components of discharges (whether thermal or non-thermal):

1. Settle to form putrescent deposits or otherwise create a nuisance; or

2. Float as debris, scum, oil, or other matter in such amounts as to form nuisances; or

3. Produce color, odor, taste, turbidity, or other conditions in such degree as to create a nuisance; or

4. Are acutely toxic; or

5. Are present in concentrations which are carcinogenic, mutagenic, or teratogenic to human beings or to significant, locally occurring, wildlife or aquatic species, unless specific standards are established for such components in subsection 62-302.500(2) or Rule 62-302.530, F.A.C.; or

6. Pose a serious danger to the public health, safety, or welfare.

(b) Thermal components of discharges which, alone, or in combination with other discharges or components of discharges (whether thermal or non-thermal):

1. Produce conditions so as to create a nuisance; or

2. Do not comply with applicable provisions of Rule 62-302.520, F.A.C.

(c) Effluent limits may be established for pollutants for which analytical detection limits are higher than the established water quality criteria based upon computation of concentrations in the receiving waters. Effluent limits will be established on site-specific conditions in the context of a Department permit. Monitoring reports and permit applications shall specify the detection limits and indicate non-detectable results in such cases. Unless otherwise specified, such non-detectable results shall be accepted as demonstrating compliance for that pollutant as long as specified effluent limits are met.

(d) Criteria for metals in Rule 62-302.530 and paragraph 62-302.500(1)(c), F.A.C., are measured as total recoverable metal. However, cadmium, chromium, copper, lead, nickel, silver, and zinc may be applied as dissolved metals when, as part of a permit application, a dissolved metals translator has been established according to the procedures described in the document, "Guidance for Establishing a Metals Translator", Florida Department of Environmental Protection, December 17, 2001.

(e) A violation of any surface water quality criterion as set forth in this chapter constitutes pollution. For certain pollutants, numeric criteria have been established to protect human health from an unacceptable risk of additional cancer caused by the consumption of water or aquatic organisms. These numeric criteria are based on annual average flow conditions. However, this allowable annual average does not relieve any activity from complying with subsection 62-302.500(1), Rule 62-302.530, F.A.C., or any other provision of water quality standards.

(f) Notwithstanding the specific numerical criteria applicable to individual classes of water, dissolved oxygen levels that are attributable to natural background conditions or man-induced conditions which cannot be controlled or abated may be established as alternative dissolved oxygen criteria for a water body or portion of a water body. Alternative dissolved oxygen criteria may be established by the Secretary or a Director of District Management in conjunction with the issuance of a permit or other Department action only after public notice and opportunity for public hearing. The determination of alternative criteria shall be based on consideration of the factors described in subparagraphs 62-302.800(1)(a)1.-4., and subsections 62-302.533(3)-(4), F.A.C. Alternative criteria shall not result in a lowering of dissolved oxygen levels in the water body, water body segment or any adjacent waters, and shall not violate the minimum criteria specified in subsection 62-302.500(1), F.A.C. Daily and seasonal fluctuations in dissolved oxygen levels shall be maintained.

Antidegradation – 62-302.700 Special Protection, Outstanding Florida Waters, Outstanding National Resource Waters [*protects water in federal and state parks and refuges*]

(1) It shall be the Department policy to afford the highest protection to Outstanding Florida Waters and Outstanding National Resource Waters. No degradation of water quality, other than that allowed in subsections 62-4.242(2) and (3), F.A.C., is to be permitted in Outstanding Florida Waters and Outstanding National Resource Waters, respectively, notwithstanding any other Department rules that allow water quality lowering.

(2) A complete listing of Outstanding Florida Waters and Outstanding National Resource Waters is provided in subsections (9) and (10). Outstanding Florida Waters generally include the following surface waters (unless named as Outstanding National Resource Waters):
(a) Waters in National Parks, Preserves, Memorials, Wildlife Refuges and Wilderness Areas;

(b) Waters in the State Park System and Wilderness Areas;
(c) Waters within areas acquired through donation, trade or purchased under the Environmentally Endangered Lands Bond Program, Conservation and Recreation Lands Program, Land Acquisition Trust Fund Program, and Save Our Coasts Program;
(d) Rivers designated under the Florida Scenic and Wild Rivers Program, federal Wild and Scenic Rivers Act of 1968 as amended, and Myakka River Wild and Scenic Designation and Preservation Act;
(e) Waters within National Seashores, National Marine Sanctuaries, National Estuarine Research Reserves, and certain National Monuments; [f-i]

(3) Each water body demonstrated to be of exceptional recreational or ecological significance may be designated as a Special Water

[…](b) It is the intent of the Commission that water bodies designated as Outstanding National Resource Waters shall be protected and maintained to the extent required by the federal Environmental Protection Agency. Therefore, the designations set forth in paragraph 62-302.700(10)(a), F.A.C., shall not be effective until the Florida Legislature enacts legislation specifically authorizing protection and maintenance of Outstanding National Resource Waters to the extent required by the federal Environmental Protection Agency pursuant to 40 C.F.R. 131.12. (c) It is also the intent of the Commission to utilize the Surface Water Improvement and Management Act planning process, as outlined in Section 373.451, F.S., and Chapter 62-43, F.A.C., to establish the numerical standards for water quality parameters appropriate for Everglades and Biscayne National Parks' status as outstanding National Resource Waters.

(d) The baseline for defining the existing ambient water quality (paragraph 52-4.242(2)(c), F.A.C) in Outstanding National Resource Waters if a five year period from March 1, 1976 to March 1, 1981, unless otherwise indicated.

Wetland Definition – None

Nutrient Criteria – 62-302.530 Table: Surface Water Quality Criteria.

The following table contains both numeric and narrative surface water quality criteria to be applied except within zones of mixing.

		Class I			Class III and Class III-Limited (see Note 4)			
Parameter	Units	Class I	Class I-Treated	Class II	Predominantly Fresh Waters	Predominantly Marine Waters	Class IV	Class V
(90)(a) Nutrients		The discharge of nutrients shall continue to be limited as needed to prevent violations of other standards contained in this chapter. Man-induced nutrient enrichment (total nitrogen or total phosphorus) shall be considered degradation in relation to the provisions of Rules 62-302.300, 62-302.700, and 62-4.242, F.A.C.						
Phosphorus (Elemental)	Micrograms/ L				≤0.1	≤0.1		

(4) Class III-Limited waters have at least one Site Specific Alternative Criterion as established under Rule 62-302.800, F.A.C.

Numeric Interpretations of Narrative Nutrient Criteria (62-302.531)

(1) The narrative water quality criteria for nutrients in paragraphs 62-302.530(47) (a) and (b), F.A.C., applies to all Class I, Class II, and Class III waters.

(2) The narrative water quality criterion for nutrients in paragraph 62-302.530(47) (b), F.A.C., shall be numerically interpreted for both nutrients and nutrient response variables in a hierarchical manner as follows:

(a) Where a site specific numeric interpretation of the criterion in paragraph 62-302.530(47) (b), F.A.C., has been established by the Department, this numeric interpretation shall be the primary interpretation. If there are multiple interpretations of the narrative criterion for a waterbody, the most recent interpretation established by the Department shall apply. [...]

1. The primary site specific interpretations are as follows:

a. Total Maximum Daily Loads (TMDLs) adopted under Chapter 62-304, F.A.C., that interpret the narrative water quality criterion for nutrients in paragraph 62-302.530(47) (b), F.A.C., for one or more nutrients or nutrient response variables,

b. Site specific alternative criteria (SSAC) for one or more nutrients or nutrient response variables as established under Rule 62-302.800, F.A.C.,

c. Estuary-specific numeric interpretations of the narrative nutrient criterion established in Rule 62-302.532, F.A.C., or

d. Other site specific interpretations for one or more nutrients or nutrient response variables that are formally established by rule or final order by the Department [...]. To be recognized as the applicable site specific numeric interpretation of the narrative nutrient criterion, the interpretation must establish the total allowable load or ambient concentration for at least one nutrient that results in attainment of the applicable nutrient response variable that represents achievement of the narrative nutrient criterion for the waterbody. A site specific interpretation is also allowable where there are documented adverse biological effects using one or more Biological Health Assessments, if information on chlorophyll a levels, algal mats or blooms, nuisance macrophyte growth, and changes in algal species composition indicate there are no imbalances in flora and a stressor identification study demonstrates that the adverse biological effects are not due to nutrients.

Site Specific Standards – 62-302.540 Water Quality Standards for Phosphorus within the Everglades Protection Area [*EPA*].

(1) Purpose and Scope. The water quality standards adopted by this rule include all of the following

elements:

(a) A numerical interpretation of the Class III [*Fish Consumption, Recreation, Propogation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife*] narrative nutrient criterion for phosphorus;

(b) A method for determining achievement of the numeric phosphorus criterion, which takes into consideration spatial and temporal variability, natural background conditions and confidence in laboratory results.

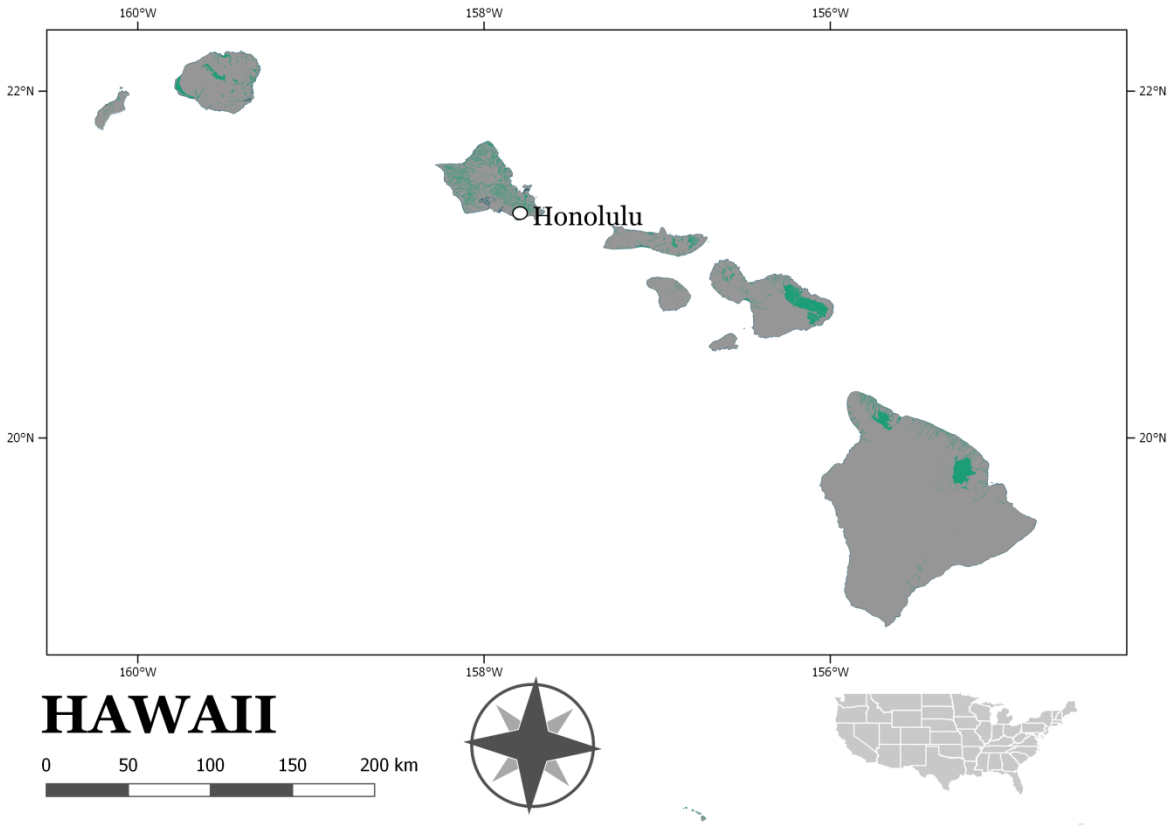
(4) Phosphorus Criterion.

(a) The numeric phosphorus criterion for Class III waters in the EPA shall be a long-term geometric mean of 10 ppb, but shall not be lower than the natural conditions of the EPA, and shall take into account spatial and temporal variability. Achievement of the criterion shall be determined by the methods in this subsection. Exceedences of the provisions of this subsection shall not be considered deviations from the criterion if they are attributable to the full range of natural spatial and temporal variability, statistical variability inherent in sampling and testing procedures or higher natural background conditions.

(b) Water Bodies. Achievement of the phosphorus criterion for waters in the EPA shall be determined separately in impacted and unimpacted areas in each of the following water bodies: Water Conservation Areas 1, 2 and 3, and the Everglades National Park.

Hawaii

Hawaii has a hierarchical water classification based on status within, near, or outside land reserves. Within reserve classes there are three wetland subclasses: elevated wetlands, low wetlands, and coastal wetlands. There is no wetland-specific beneficial use. Wetlands within reserves are Class 1a (science, education, breeding, baseline references, recreation, and aesthetics), wetlands in protected subzones are Class 1b (domestic supply, breeding, aquatic life, baseline references, science and education, recreation, aesthetics). Unclassified wetlands are Class 2 (recreation, aquatic life, agriculture and industry, shipping and navigation). Hawaii has a single narrative standard for all waters (inland and saline); specify that only the narrative standard is applicable for wetlands.



The National Wetland Inventory has mapped 157,124 acres of wetlands in Hawaii.

Beneficial Uses – §11-54-3 Classification of water uses

§11-54-2 Classification of State water
(b) Inland waters may be fresh, brackish, or saline
(1) All inland fresh waters are classified as follows, based on their ecological characteristics and other natural criteria
(C) Wetlands. [*A = Flowing waters, B = Standing waters*]
(i) Elevated wetlands (bogs, marshes, swamps, and associated ponds); and
(ii) Low wetlands (marshes swamps, and associated ponds).
(2) All inland brackish or saline waters [...]
(B) Wetlands *[A = Standing waters, C = Estuaries]*
(i) Coast wetlands (marshes, swamps, and associated ponds).

§11-54-3 Uses and specific criteria applicable to inland waters

Elevated wetlands and low wetlands, and coastal wetlands in reserves or critical habitat: Class 1.a.:

> Class 1.a. The uses to be protected in class 1.a waters are scientific and educational purposes, protection of native breeding stock, baseline references from which human-caused changes can be measured, compatible recreation, aesthetic enjoyment, and other nondegrading uses which are compatible with the protection of the ecosystems associated with waters of this class.

Elevated wetlands and low wetlands and coastal wetlands in protective subzones: Class 1.b.:

> Class 1.b. The uses to be protected in class 1.b waters are domestic supplies, food processing, protection of native breeding stock, the support and propagation of aquatic life, baseline references from which human-caused changes can be measured, scientific and educational purposes, compatible recreation, and aesthetic enjoyment. Public access to these waters may be restricted to protect drinking water supplies.

Unclassified elevated and low wetlands and coastal: Class 2

> Class 2. The objective of class 2 waters is to protect their use for recreational purposes, the support and propagation of aquatic life, agricultural and industrial water supplies, shipping, and navigation. The uses to be protected in this class of waters are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class.

Narrative Standard – §11-54-5.2 Inland water criteria.

(a) […]. Only the basic criteria set forth in section 11-54-4 apply to springs and seeps, ditches and flumes, natural freshwater lakes, reservoirs, low wetlands, coastal wetlands, saline lakes, and anchialine pools. Natural freshwater lakes, saline lakes, and anchialine pools will be maintained in the natural state through Hawai`i's "no discharge" policy for these waters.

§11-54-4 Basic water quality criteria applicable to all waters. (a) All waters shall be free of substances attributable to domestic, industrial, or other controllable sources of pollutants, including:

(1) Materials that will settle to form objectionable sludge or bottom deposits;

(2) Floating debris, oil, grease, scum, or other floating materials;

(3) Substances in amounts sufficient to produce taste in the water or detectable off-flavor in the flesh of fish, or in amounts sufficient to produce objectionable color, turbidity or other conditions in the receiving waters;

(4) High or low temperatures, biocides, pathogenic organisms, toxic, radioactive, corrosive, or other deleterious substances at levels or in combinations sufficient to be toxic or harmful to human, animal, plant or aquatic life, or in amounts sufficient to interfere with any beneficial use of the waters;

(5) Substances or conditions or combinations thereof in concentrations which produce undesirable aquatic life; and

(6) Soil particles resulting from erosion on land involved in earthwork, such as the construction of public works; highways; subdivisions; recreational, commercial, or industrial developments; or the cultivation and management of agricultural lands.

Antidegradation – don't mention wetlands specifically in policy, high quality waters within national and state parks and wildlife refuges consistitute an outstanding resource.

Definitions – coastal wetlands, elevated wetlands, (Hawaii-specific wetlands include types of wetlands like bogs), hydrophytic vegetation, low wetlands. Has its own definition of wetlands:

"Wetlands" means land that is transitional between terrestrial and aquatic ecosystems where the water table is usually at or near the surface of the land is covered by shallow water. A wetland shall have one or more of the following attributes:

(1) At least periodically the land supports predominantly hydrophytic vegetation;

(2) The substratum is predominantly undrained or hydric soil; or

(3) The substratum is nonsoil (gravel or rocks) and is at least periodically saturated with water or covered by shallow water.

Wetlands may be fresh, brackish, or saline and generally include swamps, marshes, bogs, and associated ponds and pools, mud flats, isolated seasonal ponds, littoral zones of standing water bodies, and alluvial floodplains. For the purpose of applying for water quality certifications under Clean Water Act Section 401, and for National Pollutant Discharge Elimination System (NPDES) permit purposes, the identification and delineation of wetland boundaries shall be done following the procedures described in the U.S. Army Corps of Engineers' Wetlands Delineation Manual.

Site Specific Criteria – Specific criteria for elevated wetlands: pH units shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 4.5 nor higher than 7.0.

Illinois

Illinois is listed by ASWM as having some wetland water quality protections, but nothing is specific. While they don't define wetlands or beneficial uses for them, the statute also doesn't exclude wetlands. All general use waters (anything but public water supply) are protected for aquatic life, wildlife, agriculture, secondary contact recreation, industry, and aesthetics. The dissolved oxygen standard specifically mentions wetlands and slow moving waters, which suggests the general use waters standard holds for wetlands as well.

According to the National Wetland Inventory, Illinois has 1,168,970 acres of wetlands, mapped in green.

Beneficial Uses – Section 302.202

Section 302 Subpart B: General Use Water Quality Standards

> Section 302.202 Purpose – The General Use standards will protect the State's water for aquatic life (except as provided in Section 302.213), wildlife, agricultural use, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment. Primary contact uses are protected for all General Use waters whose physical configuration permits such use.

Subpart B: Nonspecific Water Use Designations - Section 303.201 General Use Waters

Except as otherwise specifically provided, all waters of the State must meet the general use standards of Subpart B or Part 302.

Narrative Standard – Subpart B: General Use Water Quality Standards

Section 302.202 Purpose – The General Use standards will protect the State's water for aquatic life (except as provided in Section 302.213), wildlife agricultural use, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment. Primary contact uses are protected for all General Use waters whose physical configuration permits such use.

Section 302.203 Offensive Conditions – Waters of the State shall be free from sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, color or turbidity of other than natural origin. The allowed mixing provisions of Section 302.102 shall not be used to comply with the provisions of this Section.

Section 304.106 Offensive Discharges (Part 304 – Effluent Standards) – In addition to the other requirements of this Part, no effluent shall contain settleable solids, floating debris, visible oil, grease, scum or sludge solids. Color, odor and turbidity must be reduced to below obvious levels.

Antidegradation – no wetland-specific language

Wetland Definition – none

Definitions – (Section 301.440) "Waters" means all accumulations of water, surface and underground, natural, and artificial, public and private, or parts thereof, which are wholly or partially within, flow through, or border upon the State of Illinois, except that sewers and treatment works are not included except as specially mentioned; provided, that nothing herein contained shall authorize the use of natural or otherwise protected waters as sewers or treatment works except that in-stream aeration under Agency permit is allowable.

Numeric Standards –

Section 302.204 pH – pH shall be within the range of 6.5 to 9.0 except for natural causes.

Section 302.205 Phosphorus – Phosphorus as P shall not exceed 0.05 mg/l in any reservoir or lake with a surface area of 8.1 hectares (20 acres) or more, or in any stream at the point where it enters any such reservoir or lake.

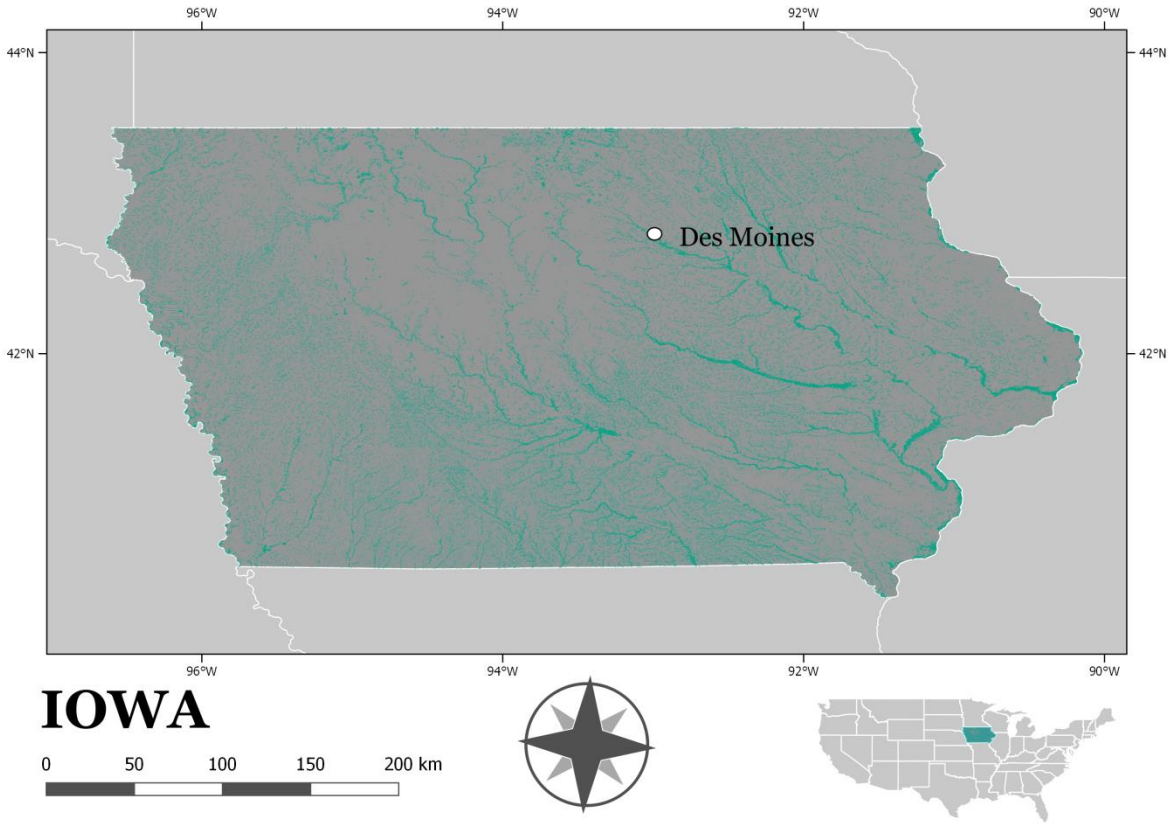
Section 302.206 Dissolved Oxygen – General use waters must maintain dissolved oxygen concentrations at or above the values contained in subsections (a), (b) and (c) of this Section.

(a) General use waters at all locations must maintain sufficient dissolved oxygen concentrations to prevent offensive conditions as required in Section 302.203 of this Part. Quiescent and isolated sections of General Use waters including but not limited to wetlands, sloughs, backwaters and waters below the thermocline in lakes and reservoirs must be maintained at sufficient dissolved oxygen concentrations to support their natural ecological functions and resident aquatic communities.

Effluent Modified Waters – had an ammonia standard but it was repealed in 2002

Iowa

The Iowa wetland beneficial use is a subcategory of lakes; all lakes and wetlands are protected for wildlife, fish, aquatic and semiaquatic life. Iowa has one narrative standard for the state with no extra provisions for wetlands, and a major focus on agricultural discharges. Standards for pH, dissolved oxygen, and E. coli are for both lakes & wetlands. Don't allow mixing zones in wetlands.



The National Wetland Inventory has mapped 763,346 acres of wetlands in Iowa.

Beneficial Uses – 567-61.3(455B) Surface water quality criteria

Class "B" waters. All waters which are designated as Class B(CW1), B(CW2), B(WW-1), B(WW-2), B(WW-3) or B(LW) are to be protected for wildlife, fish, aquatic, and semiaquatic life.

(9) Lakes and wetlands (Class "B(LW)"). These are artificial and natural impoundments with hydraulic retention times and other physical and chemical characteristics suitable to maintain a balanced community normally associated with lake-like conditions.

**661 Lakes and Wetlands Indexed*

Narrative Standard – 567-61.3(2) General water quality criteria

The following criteria are applicable to all surface waters including general use and designated use waters, at all places and at all times for the uses described in 61.3(1)"a."

a. Such waters shall be free from substances attributable to point source wastewater discharges that will settle to form sludge deposits.
b. Such waters shall be free from floating debris, oil, grease, scum and other floating materials attributable to wastewater discharges or agricultural practices in amounts sufficient to create a nuisance.

c. Such waters shall be free from materials attributable to wastewater discharges or agricultural practices producing objectionable color, odor or other aesthetically objectionable conditions.
d. Such waters shall be free from substances attributable to wastewater discharges or agricultural practices in concentrations or combinations which are acutely toxic to human, animal, or plant life.
e. Such waters shall be free from substances, attributable to wastewater discharges or agricultural practices, in quantities which would produce undesirable or nuisance aquatic life.
f. The turbidity of the receiving water shall not be increased by more than 25 Nephelometric turbidity units by any point source discharge.
g. Cations and anions guideline values to protect livestock watering [...]
h. The Escherichia coli (E. coli) content of water which enters a sinkhole or losing stream segment, regardless of the water body's designated use, shall not exceed a Geometric Mean value of 126 organisms/100 ml or a sample maximum value of 235 organisms/100 ml. No new wastewater discharges will be allowed on watercourses which directly or indirectly enter sinkholes or losing stream segments.

Antidegradation – no wetland-specific language; Tier 3/Outstanding National Resource Waters includes waters national and state parks and wildlife refuges

Wetland Definition – Lakes and wetlands (Class "B(LW)"). These are artificial and natural impoundments with hydraulic retention times and other physical and chemical characteristics suitable to maintain a balanced community normally associated with lake-like conditions.

Numeric Standards –

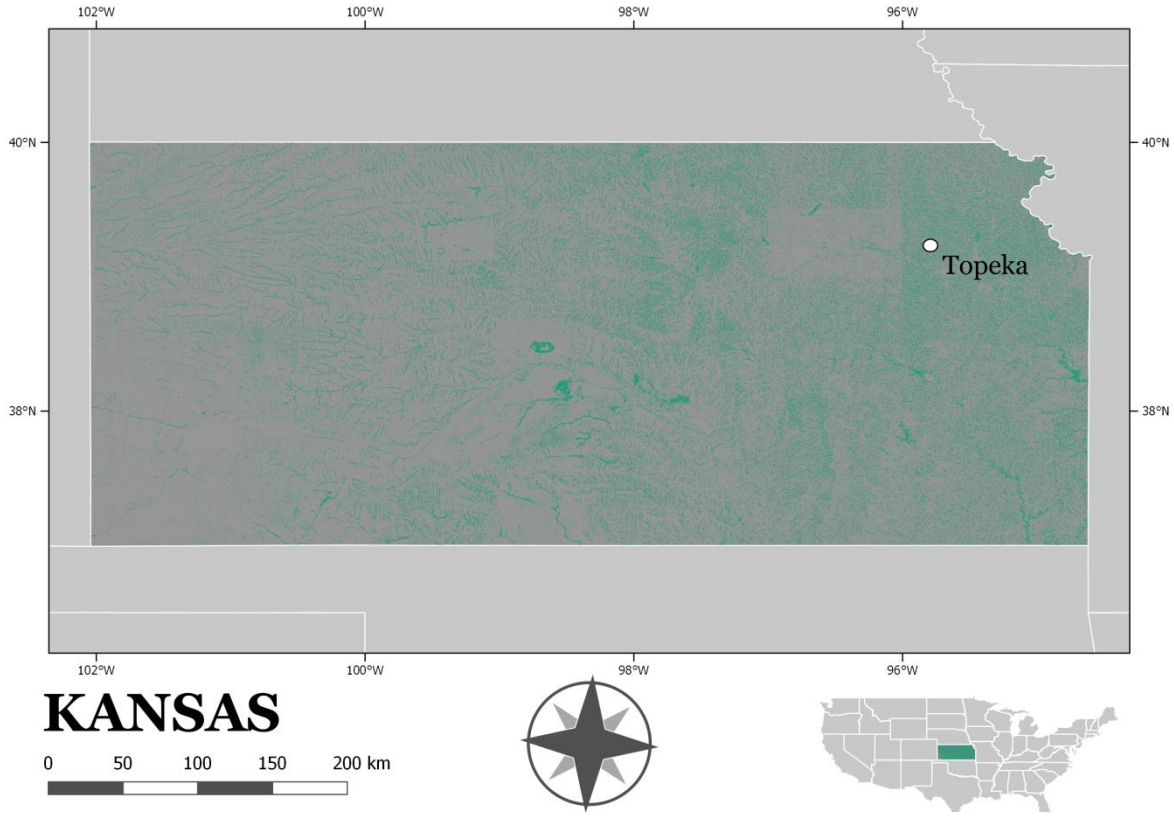
Class "B" waters. All waters which are designated as Class B(CW1), B(CW2), B(WW-1), B(WW-2), B(WW-3) or B(LW) are to be protected for wildlife, fish, aquatic, and semiaquatic life. The following criteria shall apply to all Class "B" waters designated in subrule 61.3(5).

(1) Dissolved oxygen. Dissolved oxygen shall not be less than the values shown in Table 2 of this subrule. [*Minimum value for 16 hours or at any time 5.0 mg/l*]
(2) pH. The pH shall not be less than 6.5 nor greater than 9.0. The maximum change permitted as a result of a waste discharge shall not exceed 0.5 pH units.
(3) General chemical constituents. The specific criteria shown in Tables 1, 2, and 3 of this subrule apply to all water designated in subrule 61.3(5). The sole determinant of compliance with these criteria will be established by the department on a case-by-case basis. Effluent monitoring or instream monitoring, or both, will be the required approach to determine compliance.

Mixing Zones – 61.2(4) Regulatory mixing zones (d) (1) No mixing zone or zone of initial dilution will be allowed for waters designated as lakes or wetlands.

Kansas

Classified wetlands in Kansa should support recreation and aquatic life uses. They may also support domestic supply, irrigation, and livestock. Wetlands are water body classification, rather than a use, statute lists many wetlands in the surface water register (which lays out beneficial uses), and mentions wetlands in antidegradation chapter. However, there are no wetland specific uses or caveats for applying surface water standards to wetlands.



According to the National Wetland Inventory, Kansas has 638,095 acres of wetlands, mapped in green.

Beneficial Use – Kansas Surface Water Register

(B) Classified wetlands shall be the following:

(i) All wetlands owned by federal, state, county, or municipal authorities;

(ii) all privately owned wetlands open to the general public for hunting, trapping, or other forms of secondary contact recreation; and

(iii) all wetlands classified as outstanding national resource waters or exceptional state waters, or designated as special aquatic life use waters according to subsection (d).

Wetlands created for the purpose of wastewater treatment shall not be considered classified wetlands

Wetlands are classified as general purpose waters, exceptional state waters, and outstanding natural resource waters. Classified wetlands have the following uses:

"Aquatic life support use" means the use of classified waters other than classified stream segments for the maintenance of the ecological integrity of lakes, wetlands, and ponds, including the sustained growth and propagation of native aquatic life; naturalized, important, recreational aquatic life; and indigenous or migratory semiaquatic or terrestrial wildlife directly or indirectly dependent on classified surface waters other than classified stream segments for survival.

"Special aquatic life" [*9 wetland areas*] means either classified surface waters other than classified stream segments that contain combinations of habitat types and indigenous biota not found commonly in the state or classified surface waters other than classified stream segments that contain representative populations of threatened or endangered species.

"Expected aquatic life" [*most of 26 HUC segment wetlands*] means classified surface waters other than classified stream segments contain habitat types and indigenous biota commonly found or expected in the state

"Secondary contact recreational use" [*all*] for classified surface waters other than classified stream segments means recreation during which the ingestion of classified surface waters other than classified stream segments is not probable. This use shall include wading, fishing, trapping, and hunting.

"Groundwater recharge use" [*few*] means the use of classified surface waters other than classified stream segments for replenishing fresh or usable groundwater resources. This use may involve the infiltration and percolation of classified surface waters other than classified stream segments through sediments and soils or the direct injection of classified surface waters other than classified stream segments into underground aquifers.

"Domestic supply use" [*1*] means the use of classified surface waters other than classified stream segments, after appropriate treatment, for the production of potable water.

"Irrigation," which means the withdrawal of classified surface waters other than classified stream segments for application onto land

"Livestock watering," which means the provision of classified surface waters other than classified stream segments to livestock for consumption

K.A.R. 26-16-28d (3) The use designations for classified streams, lakes, wetlands, and ponds not listed in the surface water register shall be determined by the secretary on a case-by-case basis in accordance with paragraph (d)(1)

Narrative Standard – Article 16 – Surface Water Quality Standards

(b) General criteria for surface waters. The following criteria shall apply to all surface waters, regardless of classification:

(1) Surface waters shall be free, at all times, from the harmful effects of substances that originate from artificial sources of pollution and that produce any public health hazard, nuisance condition, or impairment of a designated use.

(2) Hazardous materials derived from artificial sources, including toxic substances, radioactive isotopes, and infectious microorganisms derived from point sources or nonpoint sources, shall not occur in surface waters at concentrations or in combinations that jeopardize the public health or the survival or well-being of livestock, domestic animals, terrestrial wildlife, or aquatic or semiaquatic life.

(3) Surface waters shall be free of all discarded solid materials, including trash, garbage, rubbish, offal, grass clippings, discarded building or construction materials, car bodies, tires, wire, and other unwanted or discarded materials. The placement of stone and concrete rubble for bank stabilization shall be acceptable to the department if all other required permits are obtained before placement.

(4) Surface waters shall be free of floating debris, scum, foam, froth, and other floating materials directly or indirectly attributable to artificial sources of pollution.

(5) Oil and grease from artificial sources shall not cause any visible film or sheen to form upon the surface of the water or upon submerged substrate or adjoining shorelines, nor shall these materials cause a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines.

(6) Surface waters shall be free of deposits of sludge or fine solids attributable to artificial sources of pollution.

(7) Taste-producing and odor-producing substances of artificial origin shall not occur in surface waters at concentrations that interfere with the production of potable water by conventional water treatment processes, that impart an unpalatable flavor to edible aquatic or semiaquatic life or terrestrial wildlife, or that result in noticeable odors in the vicinity of surface waters.

(8) The natural appearance of surface waters shall not be altered by the addition of color producing or turbidity-producing substances of artificial origin.

(9) In stream segments where background concentrations of naturally occurring substances, including chlorides and sulfates, exceed the water quality criteria listed in table 1a of the "Kansas surface water quality standards: tables of numeric criteria," as adopted by reference in subsection (e), the existing water quality shall be maintained, and the newly established numeric criteria shall be the background concentration.

(c) Application of criteria for designated uses of surface waters.

(1) The numeric criteria in tables 1a, 1b, 1c, 1d, and 1e of the "Kansas surface water quality standards: tables of numeric criteria" shall not apply if the critical low flow is less than 0.03 cubic meter per second (1.0 cubic foot per second) for waters designated as expected aquatic life use waters and restricted aquatic life use waters, unless studies conducted or approved by the department show that water present during periods of no flow, or flow below critical low flow, provides important refuges for aquatic life and permits biological recolonization of intermittently flowing segments.

(d) Criteria for designated uses of surface waters. The following criteria shall apply to all classified surface waters for the indicated designated uses:

(2) Aquatic life support use.

(A) Nutrients. The introduction of plant nutrients into streams, lakes, or wetlands from artificial sources shall be controlled to prevent the accelerated succession or replacement of aquatic biota or the production of undesirable quantities or kinds of aquatic life.

(B) Suspended solids. Suspended solids added to surface waters by artificial sources shall not interfere with the behavior, reproduction, physical habitat, or other factors related to the survival and propagation of aquatic or semiaquatic life or terrestrial wildlife. In the application of this provision, suspended solids associated with discharges of presedimentation sludge from water treatment facilities shall be deemed noninjurious to aquatic and semiaquatic life and terrestrial wildlife, if these discharges fully meet the requirements of paragraphs (b)(6) and (8) and paragraph (d)(2)(D).

(C) Temperature.

(i) Heat of artificial origin shall not be added to a surface water in excess of the amount that will raise the temperature of the water beyond the mixing zone more than 30 C above natural conditions. Additionally, a discharge to a receiving water shall not lower the temperature of the water beyond the mixing zone more than 3^0 C below natural conditions. The normal daily and seasonal temperature variations occurring within a surface water before the addition of heated or cooled water of artificial origin shall be maintained.

(ii) Temperature criteria applicable to industrial cooling water recycling reservoirs that meet the requirements for classification specified in K.A.R. 28-16-28d shall be established by the secretary on a case-by-case basis to protect the public health, safety, or the environment.

(D) Toxic substances.

(i) Conditions of acute toxicity shall not occur in classified surface waters outside of zones of initial dilution, nor shall conditions of chronic toxicity occur in classified surface waters outside of mixing zones.

(ii) Acute criteria for the aquatic life support use specified in tables 1a, 1b, and 1c of the "Kansas surface water quality standards: tables of numeric criteria" shall apply beyond the zone of initial dilution. Chronic criteria for the aquatic life support use specified in tables 1a, 1b, 1d, and 1e of

the “Kansas surface water quality standards: tables of numeric criteria” shall apply beyond the mixing zone.

(iii) If a discharge contains a toxic substance that lacks any published criteria for the aquatic life support use, or if a discharge contains a mixture of toxic substances capable of additive or synergistic interactions, bioassessment methods and procedures shall be specified by the department to establish whole-effluent toxicity limitations that are consistent with paragraph (d)(2)(D)(i).

Antidegradation – mentions wetlands in definition of antidegradation but not in policy; Tier 3/Outstanding Resource Waters such as those in National and State Parks, wildlife refuges, outstanding fisheries, and other waters of unique recreational or ecological value.

Wetland Definition – modified 40 CFR § 116.3

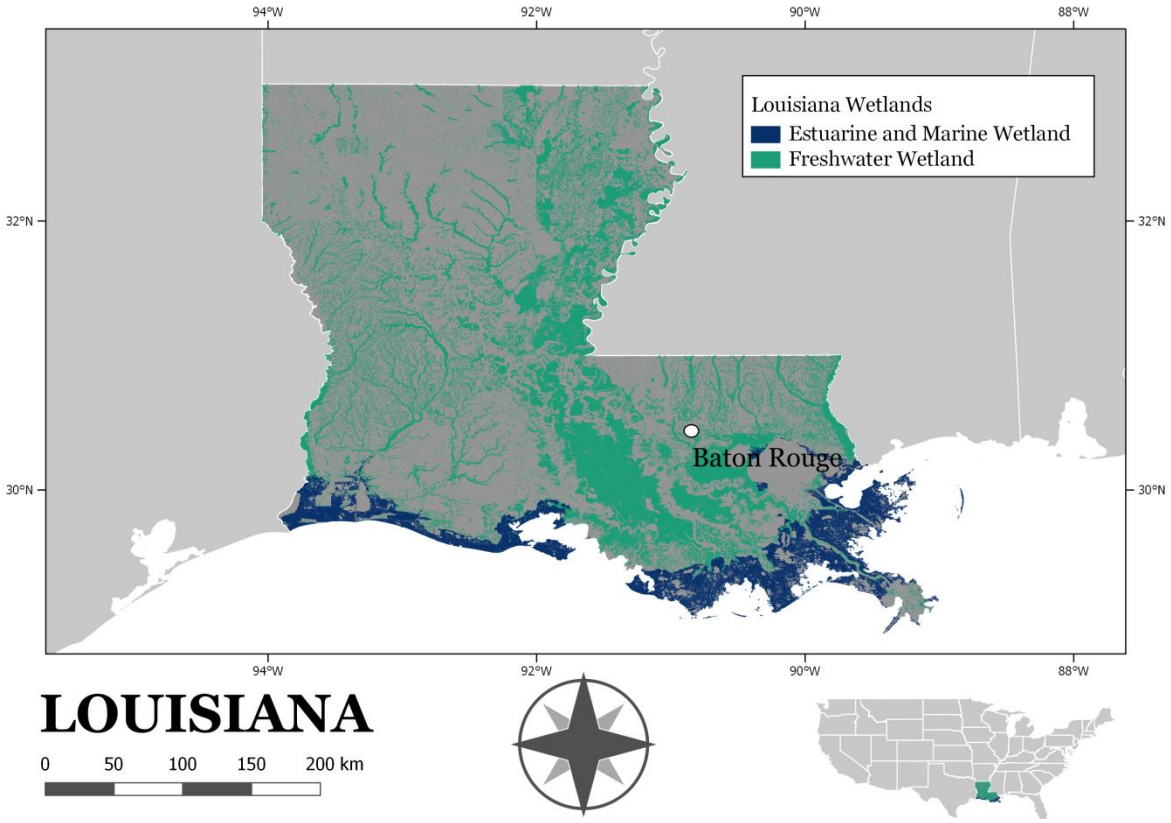
Definitions – “Surface waters” means the following:

(3) wetlands, including swamps, marshes, bogs, and similar areas that are inundated or saturated by surface water or groundwater at a frequency and a duration that are sufficient to support, and under normal circumstances that do support, a prevalence of vegetation typically adapted for life in saturated soil conditions

**No mixing zones in wetlands*

Louisiana

Louisiana has extensive mentions of wetlands in their standards, but they are primarily in regard to a waste management program. Louisiana code has a section on wetland values that covers impacts due to hurricanes and oil and gas.



Louisiana has 8,196,929 acres of NWI wetlands.

Beneficial Uses – Chapter 11. Surface Water Quality Standards §1109. Policy

1109.J.1. Wetlands, as defined in LAC 33:IX.1105, are a valuable resource to the state of Louisiana. Because of the state's natural low elevations, extensive riverine and riparian environments, and the presence of the Mississippi River delta, Louisiana has a large and diverse amount of wetland habitat. Specific values of Louisiana wetlands include commercial, recreational, and cultural uses. In addition, Louisiana wetlands provide important biological and physiochemical functions that include, but are not limited to, buffering against hurricanes and storms, holding excess floodwaters during high rainfall or high tides, recharging groundwater aquifers used for drinking water and irrigation, and improving water quality by filtering pollutants and taking up nutrients.

1109.J.3. Wetlands approved by the administrative authority for wastewater assimilation projects pursuant to the Water Quality Management Plan, Volume 3, Section 10, [...] are assigned the following designated uses: secondary contact recreation and fish and wildlife propagation.

Secondary Contact Recreation - any recreational or other water contact activity in which prolonged or regular full-body contact with the water is either incidental or accidental, and the probability of ingesting appreciable amounts of water is minimal.

Fish and Wildlife Propagation - the use of water for aquatic habitat, food, resting, reproduction, cover, and/or travel corridors for any indigenous wildlife and aquatic life species associated with the aquatic environment. This use also includes the maintenance of water quality at a level that prevents damage to indigenous wildlife and aquatic life species associated with the aquatic environment and contamination of aquatic biota consumed by humans.

Narrative Standard – General Criteria (1113.B)

Except where specifically exempted elsewhere in these standards, the general criteria shall apply at all times to the surface waters of the state, including wetlands, whether they are identified in standards or not. General criteria specifically apply to human activities; they do not apply to naturally occurring conditions.

1. Aesthetics. The waters of the state shall be maintained in an aesthetically attractive condition and shall meet the generally accepted aesthetic qualifications. All waters shall be free from such concentrations of substances attributable to wastewater or other discharges sufficient to:

a. settle to form objectionable deposits
b. float as debris, scum, oil, or other matter to form nuisances or to negatively impact aesthetics
c. result in objectionable color, odor, taste, or turbidity;
d. injure, be toxic, or produce demonstrated adverse physiological or behavioral responses in humans, animals, fish, shellfish, wildlife, or plants; or
e. produce undesirable or nuisance aquatic life.

2. Color. Water color shall not be increased to the extent that it will interfere with present usage or projected future use of the state's water bodies.

a. Waters shall be free from significant increases over natural background color levels.
c. No increases in true or apparent color shall reduce the level of light penetration below that required y desirable indigenous species or aquatic life.

3. Floating, Suspended, or Settleable Solids [*not applicable to wetlands*]

4. Taste and Odor. Taste- and odor- producing substances shall be limited to concentrations that will not interfere with the production of potable water by conventional treatment methods or impart unpalatable flavor to food fish, shellfish, and wildlife, or result in offensive odors arising from the waters, or otherwise interfere with the designated water uses.

5. Toxic substances. No substances shall be present in the waters of the state or the sediments underlying said waters in quantities that alone or in combination will be toxic to human, plant, or animal life or significantly increase health risks due to exposure to the substances or consumption of contaminated fish or other aquatic life.

6. Oil and Grease. Free or floating oil and grease shall not be present in quantities large enough to interfere with the designated water uses, nor shall emulsified oils be present in quantities large enough to interfere with the designated uses.

7. Foaming or Frothing Materials. Foaming or frothing materials of a persistent nature are not permitted.

8. Nutrients. The naturally occurring range of nitrogen-phosphorus ratios shall be maintained. This range shall not apply to designated intermittent streams. To establish the appropriate range of ratios and compensate for natural seasonal fluctuations, the administrative authority will use site-specific studies to establish limits for nutrients. Nutrient concentrations that produce aquatic growth to the extent that it creates a public nuisance or interferes with designated water uses shall not be added to any surface waters.

9. Turbidity. [*Not applicable to wetlands*]

10. Flow. The natural flow of state waters shall not be altered to such an extent that the basic character and water quality of the ecosystem are adversely affected expect in situations where alterations are necessary to protect human life or property. If alterations to the natural flow are deemed necessary, all reasonable steps shall be taken to minimize the adverse impacts of such alterations. Additionally, all reasonable steps shall be taken to mitigate the adverse impacts of unavoidable alterations.

11. Radioactive Materials. Radioactive materials in the surface waters of the state designated for drinking water supply shall not exceed levels established pursuant to the Federal Safe Drinking Water Act.

12. Biological and Aquatic Community Integrity.

a. The biological and community structure and function in state waters shall be maintained, protected, and restored except where not attainable and feasible as defined in LAC 33:IX.1109. This is the ideal condition of the aquatic community inhabiting the unimpaired water bodies of a specified habitat and region as measured by community structure and function. The biological integrity will be guided by the fish and wildlife propagation use designated for that particular water body. The condition of these aquatic communities shall be determined from the measures of physical, chemical, and biological characteristics of each surface water body type, according to its designated use. Reference site conditions will represent naturally attainable conditions. These sites should be the least impacted and most representative of water body types. Such reference sites or segments of water bodies shall be those observed to support the greatest variety and abundance of aquatic life in the region as is expected to be or has been recorded during past surveys in natural settings essentially undisturbed by human impacts, development, or discharges. This condition shall be determined by consistent sampling and reliable measures of selected, indicative communities of animals (i.e., fish, invertebrates, etc.) and/or plants as established by the department and may be used in conjunction with acceptable chemical, physical, and microbial water quality measurements and records as deemed appropriate for this purpose.

b. Assessment of Biological Integrity for Wetlands Approved for Wastewater Assimilation Projects Pursuant to the Water Quality Management Plan [...]. Wetland biological integrity will be guided by above-ground wetland vegetative productivity with consideration given to floral diversity. Due to effluent addition, the discharge area of a wetland shall have no more than a 20 percent reduction in the rate of total above-ground wetland productivity over a five-year period as compared to a reference area. The discharge area is the area of a wetland directly affected by effluent addition. For each location, the discharge area will be defined by the volume of discharge. The reference area is the wetland area that is nearby and similar to the discharge area but that is not affected by effluent addition. Above-ground productivity is a key measure of overall ecosystem health in the wetlands of south Louisiana. Primary productivity is dependent on a number of factors, and the methods for measurement of above-ground productivity and floral diversity are found in the current Water Quality Management Plan.

13. Other Substances and Characteristics. General criteria on other substances and characteristics not specified in this Subsection will be developed as needed.

**Extensive classification in definitions section that covers vegetation and hydroperiod when appropriate: Saline marshes (Gulf of Mexico), Bottomland Hardwood Swamps, Cypress-Tupelo Swamps, Forested Wetlands, Freshwater Emergent wetlands (including freshwater marshes) - two subtypes (floating and attached), Estuary, Non-Forested Wetlands*

Antidegradation – no wetland specific language or water use categories; waters in parks and refuges may be of higher quality, but new discharges are allowed if economically important.

Wetland Definition – None

****Applicable Wetland Criteria (1109.J.4.) –***

Wetlands provide several values and functions that necessitate water quality criteria protective primarily of vegetative productivity. Additionally, wetlands can periodically become anoxic or anaerobic, or lack water altogether. Therefore, the following criteria are applicable to wetlands approved by the administrative authority for wastewater assimilation projects pursuant to the Water Quality Management Plan, Volume 3, Section 10, Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards.

a. A numerical dissolved oxygen criterion is not necessary to protect the beneficial use of fish and wildlife propagation.
b. The general criteria [*narrative standard*] found in LAC 33:IX.1113.B, except for LAC 33:IX.1113.B.3 [floating, suspended, and settleable solids] and 9 [turbidity] apply.
c. Numerical criteria found in LAC 33:IX.113.C.4, 5.b, and 6 apply.
d. The biological criteria found in LAC 33:IX.1113.B.12.b apply.

e. Additional site-specific criteria may be necessary to protect other existing or beneficial uses identified by the administrative authority.

Discharge into wetlands –

5. A wastewater discharge may be proposed for a wetland of any defined type only if the discharge will not cause impairment of the wetland or exceedance of applicable general or site-specific criteria.

6. Discharges to wetlands approved by the administrative authority for wastewater assimilation projects will only be permitted following procedures pursuant to the Water Quality Management Plan, Volume 3, Section 10, Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards.

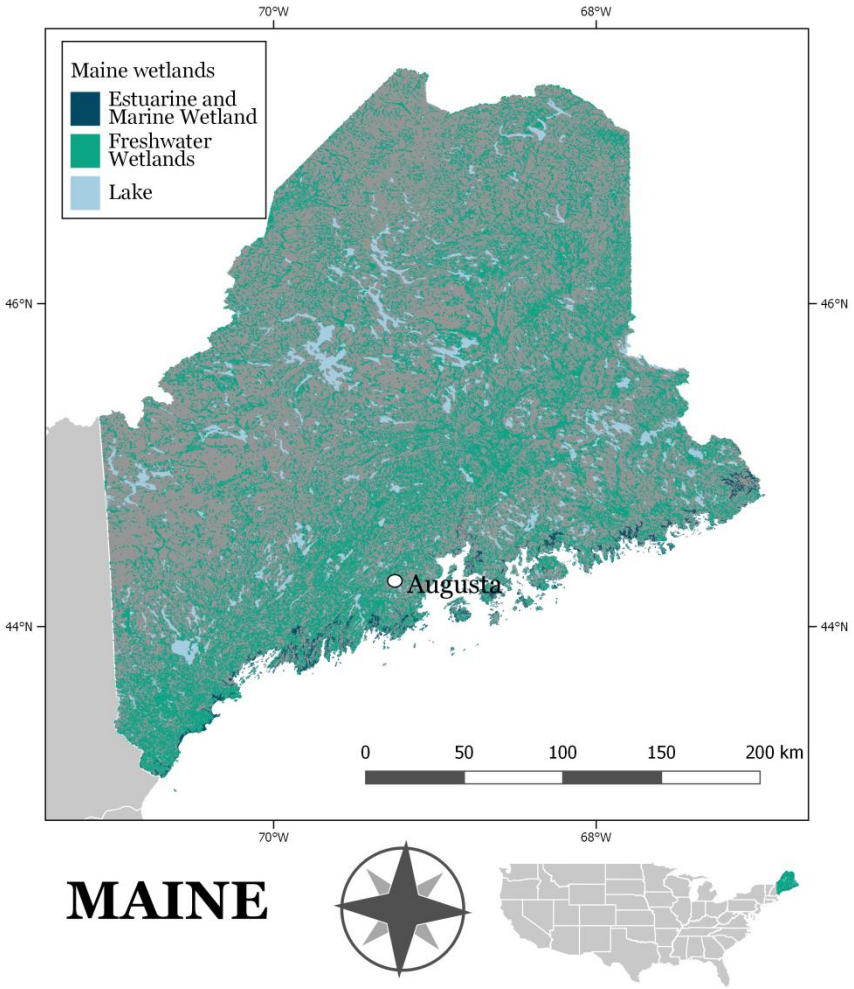
LDEQ recognizes that many of the state's wetlands are deteriorating due to changes to hydrology and the resultant lack of nutrients, suspended solids, and a high natural subsidence rate. Therefore the department may allow the discharge of the equivalent of secondarily treated effluent into wetlands for the purposes of nourishing and enhancing those wetlands.

The quantity and frequency of the measurements will be dependent upon the flow of the discharge and the loading rate to the wetland, but may include, but is not limited to sampling in the discharge area and the reference site for variations in:

1. floral species diversity, 2. above-ground productivity, 3. water stages, 4. metals and nutrient analysis from plant tissue samples, 5. metals and nutrient analysis from sediment samples, 6. water quality analysis of metals, nutrient, and other components, and 7. accretion measurement(s).

Maine

Wetlands are not mentioned specifically in the Maine code, but there is a use class for great ponds, natural lakes, and ponds <10 ac (the last one sounds like a wetland to me). Within that use class (GPA), natural habitat should be protected and each should be described by its trophic state (defined by chlorophyll-a and phosphorus). No single narrative standard in code, but pieces are mixed into the classification description, which includes being free from algae and with stable or decreasing trophic state. Additional chapter includes specifications about natural water level variation and the functions it should support.



The National Wetland Inventory maps 2,134,765 acres of wetlands and lakes potentially relevant to the GPA beneficial use.

Beneficial Uses & Narrative Standard – Title 38 Chapter 3 Subchapter 1 Article 4-A

§465-A. Standards for classification of lakes and ponds

The department shall have one standard for the classification of great ponds and natural lakes and ponds less than 10 acres in size. Impoundments of rivers that are defined as great ponds pursuant to section 480-B are classified as GPA or as specifically provided in sections 467 and 468.

1. Class GPA waters. Class GPA shall be the sole classification of great ponds and natural ponds and lakes less than 10 acres in size.
   A. Class GPA waters must be such quality that they are suitable for the designated uses of drinking water after disinfection, recreation in and on the water, fishing, agriculture,

industrial process and cooling water supply, hydroelectric power generation, navigation and as habitat for fish and other aquatic life. The habitat must be characterized as natural.

B. Class GPA waters must be described by their trophic state based on measures of the chlorophyll 'a' content, Secchi disk transparency, total phosphorus content and other appropriate criteria. Class GPA waters must have a stable or decreasing trophic state, subject only to natural fluctuations and must be free of culturally induced algal blooms that impair their use and enjoyment. The number of Escherichia coli bacteria of human and domestic animal origin in these waters may not exceed a geometric mean of 29 per 100 milliliters or an instantaneous level of 194 per 100 milliliters.

C. There may be no new direct discharge of pollutants into Class GPA waters. [*Water quality improving chemicals, pesticides for controlling invasive species, storm water, and pesticides for mosquitos are exempt*.]

Wetland Definition – no wetland definition, waters of the state includes all surface and subsurface waters within, flowing through, under or bordering Maine

Antidegradation – existing in-stream uses must be protected and maintained, habitat provided by 'significant wetlands' is considered an in-stream use; state and federal parks and refuges considered outstanding national resource.

Hydroperiod Protection – Chapter 587: In-stream Flows and Lake and Pond Water Levels

2. C. Natural variation of water level. "Natural variation of water level" in lakes and ponds is the expected dynamic fluctuation in water level that occurs seasonally and inter-annually that provides for physical characteristics of depth and volume necessary to (1) provide habitat conditions for all life stages of indigenous aquatic organisms, (2) provide water levels sufficient to support important physical processes including thermal stratification, temperature moderation, wetland replenishment, sediment erosion and deposition, (3) maintain biological processes of ingress and egress to habitats, maintenance of primary production, migration and movement of organisms, organic matter and nutrient cycling, and wetlands maintenance. In establishing site-specific water levels as set forth in sections 7 and 8 of this chapter, variation of a magnitude, rate of change, seasonal timing, and annual occurrence, including provision for infrequent flood levels, must be sufficient to adequately provide for the conditions and processes identified above.

6. Water level requirements for Class GPA waters. Except as provided for in this section, water levels of Class GPA waters shall be maintained as they naturally occur. Withdrawal or other direct or indirect removal, diversion, activity or use of these waters that causes the natural water level to be altered shall occur as provided in paragraph 6-A below.

A. Water level established by standard allowable alteration. Water levels in Class GPA waters may not be less than the levels defined in subparagraphs A (1-3) below, except when natural conditions alone cause those levels to be less, or where the Commissioner has determined, as established in sections 7 or 8 of this chapter, that site-specific water levels may be established that are protective of all water quality standards, including all designated uses and characteristics of those waters.

(1) Class GPA waters without a natural surface water outlet. Water levels must be maintained within the seasonal levels listed below, unless as a naturally occurring condition:

(a) within 1.0 foot of the normal high water from April 1 to July 31; and

(b) within 2.0 feet of the normal high water from August 1 until March 31.

(2) Class GPA waters with a natural surface water outlet, including beaver dams. Water level must be maintained within the seasonal levels listed below, unless as a naturally occurring condition:

(a) within 1.0 foot of normal high water from April 1 to July 31; and,

(b) within 2.0 feet of normal high water from August 1 to March 31.

Flow in the outlet stream must be sufficient to maintain seasonal aquatic base flow, as defined in sections 4, 5, 7, or 8 of this chapter with adjustment for evaporation loss from the Class GPA water, or the natural inflow minus evaporation, whichever is less.

(3) Class GPA waters where the water level is controlled by a dam and is not used for hydropower storage or generation. Water levels must be maintained to meet all applicable water quality standards, including all designated uses and characteristics of Class GPA waters, and flow must be provided for downstream waters that will protect all water quality standards applicable to those downstream waters. Withdrawal for agriculture, aquaculture, commercial, or industrial purposes will be limited to a volume of water that is no greater than:

(a) 1.0 acre-foot of water per acre of the waterbody at normal high water from April 1 to July 31. Additional volume increments may be withdrawn whenever it can be demonstrated that water replacement has occurred; and,

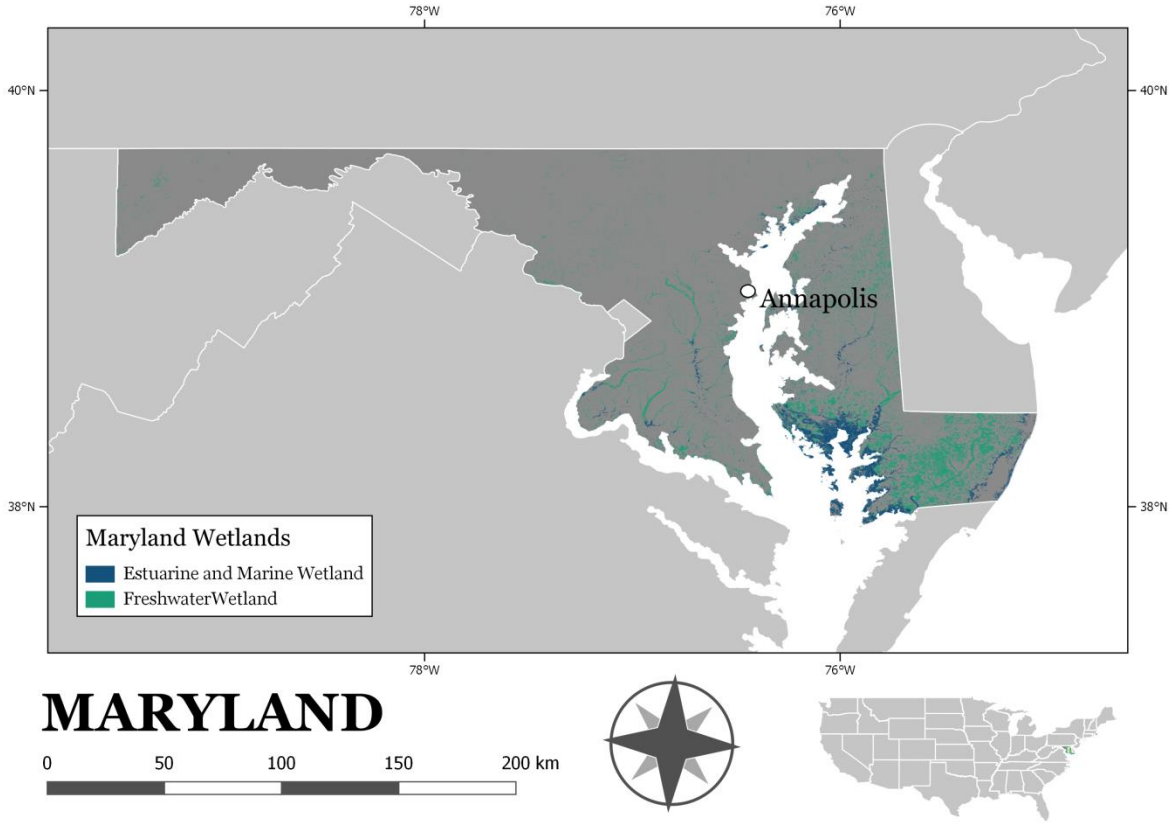
(b) a total of 2.0 acre-feet of water per acre of the waterbody at normal high water from August 1 to March 31. Additional volume increments may be withdrawn whenever it can be demonstrated that water replacement has occurred. In no case may withdrawal cause the water level to be less than the lowest water level that can be achieved through operation of the dam.

Notwithstanding the above limitation on water withdrawal amounts from GPA waters, water withdrawal may not diminish the total volume of the waterbody by more than 25%.

If a dam is removed on Class GPA waterbody, the standard allowable alteration of water level is that the alteration provided in subparagraph 6-A (2) above.

Maryland

Wetlands are not mentioned or defined in the Maryland code, but a subcategory of the Estuarine and Marine Aquatic Life and Shellfish Harvesting use is Seasonal Shallow-Water Submerged Aquatic Vegetation. There are additional parts of the narrative standard and specific dissolved oxygen criteria for the aquatic life and shellfish harvesting use and submerged aquatic vegetation subcategory.



Maryland has 701,524 acres of wetlands according to the National Wetland Inventory

Beneficial Use – 26.08.02.02-1 Support of Estuarine and Marine Aquatic Life and Shellfish Harvesting

D. Seasonal Shallow-Water Submerged Aquatic Vegetation Subcategory. This subcategory includes:

(1) Tidal fresh waters of the Chesapeake Bay and its tidal tributaries that have the potential for or are supporting the survival, growth, and propagation of rooted, underwater bay grasses in tidally influenced waters from April 1 through October 1; and

(2) Low salinity (oligohaline and mesohaline) waters of the Chesapeake Bay and its tidal tributaries that have the potential for or are supporting the survival, growth , and propagation of rooted, underwater bay grasses in tidally influenced waters from April 1 through October 1.

26.08.02.07 Surface Water Use Designation – A. All surface waters of this State shall be protect for water contact recreation, fishing, and protection of aquatic life and wildlife.

Narrative Standard – 26.08.02.03 Surface Water Quality Criteria.

B. General Water Quality Criteria- The waters of this State may not be polluted by:

(1) Substances attributable to sewage, industrial waste, or other waste that will settle to form sludge deposits that:

(a) Are unsightly, putrescent, or odorous, and create a nuisance, or

(b) Interfere directly or indirectly with designated uses;

(2) Any material, including floating debris, oil, grease, scum, sludge, and other floating materials attributable to sewage, industrial waste, or other waste in amounts sufficient to:

(a) Be unsightly;

(b) Produce taste or odor;

(c) Change the existing color to produce objectionable color for aesthetic purposes;

(d) Create a nuisance; or

(e) Interfere directly or indirectly with designated uses;

(3) High temperature or corrosive substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which:

(a) Interfere directly or indirectly with designated uses, or

(b) Are harmful to human, animal, plant, or aquatic life;

(4) Acute toxicity from any discharge outside the mixing zone established under Regulation .05 of this chapter for the application of acute criteria for protection of aquatic life; and

(5) Toxic substances attributable to sewage, industrial wastes, or other wastes in concentrations outside designated mixing zones, which:

(a) Interfere directly or indirectly with designated uses, or

(b) Are harmful to human, plant, or aquatic life.

26.08.03-3 Water Quality Criteria Specific to Designated Use.

C. Criteria for Class II Waters – Support of Estuarine and Marine Aquatic Life and Shellfish Harvesting.

(1) Bacteriological Criteria. These criteria are the same as for Class I, criteria for protection of recreational use, except, in Shellfish Harvest Waters, the following criteria also apply [...]

(3) Temperature – same as Class I waters.

(4) pH – same as Class I waters.

(5) Turbidity – same as Class I waters.

(6) Color – same as Class I waters.

(7) Toxic Substance Criteria. All toxic substance criteria to protect:

(a) Estuarine or salt water aquatic organisms apply in accordance with the requirements of Regulation .03-1B; and

(b) The wholesomeness of fish for human consumption apply.

(8) Dissolved Oxygen Criteria for Class II Waters.

(c) The seasonal shallow-water submerged aquatic vegetation subcategory is the same as for the open-water fish and shellfish subcategory year-round.

(d) Open-Water Fish and Shellfish Subcategory. The dissolved oxygen concentrations in areas designated as open-water fish and shellfish subcategory shall be:

(i) Great than or equal to 5.5 milligrams/liter for a 30-day averaging period year-round in tidal fresh waters (salinity less than or equal to 0.5 parts per thousand);

(ii) Great than or equal to 5 milligrams/liter for a 30-day averaging period year-round (salinity greater than 0.5 parts per thousand);

(iii) Great than or equal to 4.0 milligrams/liter for a 7-day averaging period year-round;

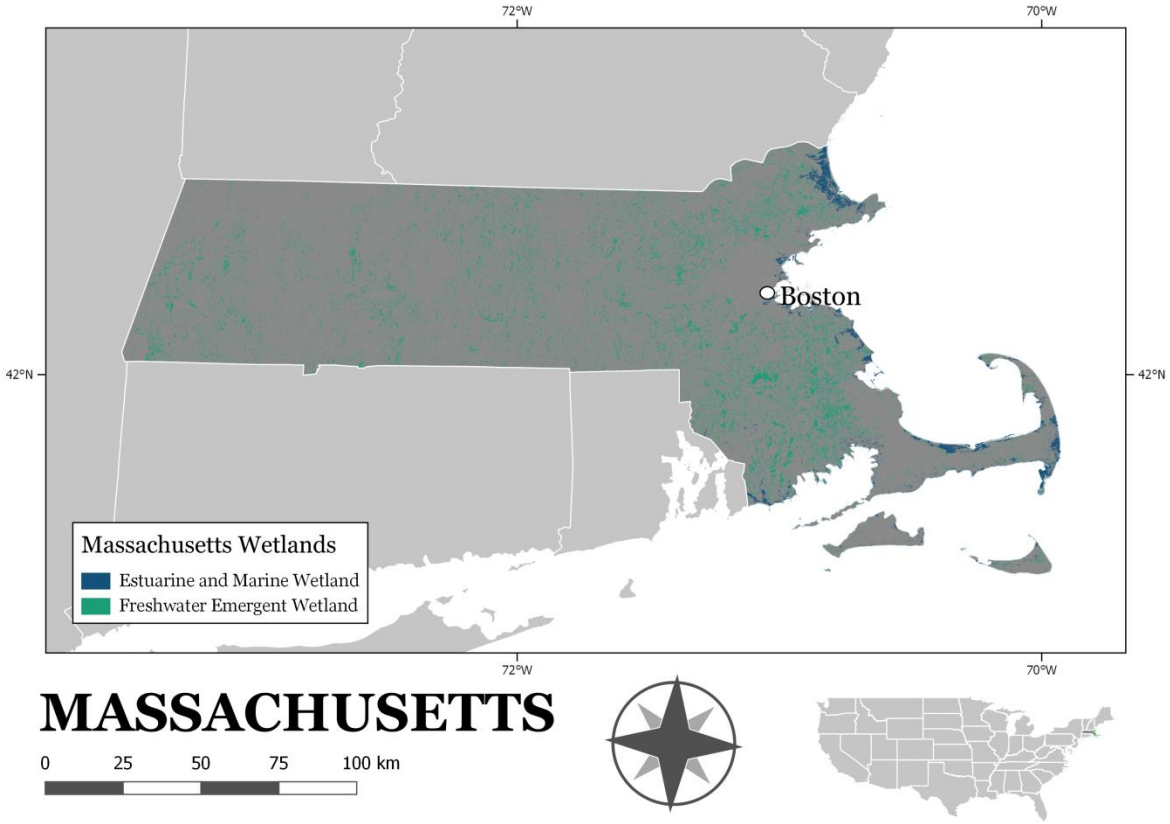
(iv) Great than or equal to 3.2 milligrams/liter as an instantaneous minimum year-round;

Antidegradation – no wetland-specific language

Wetland Definition – none

Massachusetts

Wetlands are part of surface water and waters of the commonwealth definitions. Massachusetts has no wetland specific use, but all wetlands bordering classified waters are designated as Outstanding Resource Waters within the same class. Vernal pools are also designated as ORW. There are no criteria for applying standards to wetlands, but a narrative standard for each class of waters.



Massachusetts has 560,351 acres of wetlands according to the National Wetland Inventory.

Beneficial Uses – 4.06: Basin Classification and Maps

(2) Wetlands. Wetlands bordering Class A Outstanding Resource Waters are designated Class A Outstanding Resource Waters. Vernal pools are designated Class B Outstanding Resource Waters. All wetlands bordering other Class B, SB or SA Outstanding Resource Waters are designated as Outstanding Resource Waters to the boundary of the defined area. All other wetlands are designated Class B, High Quality Waters for inland waters and Class SA, High Quality Waters for coastal and marine waters.

4.05: Classes and Criteria

3.a. (a) Class A. These waters include waters designated as a source of public water supply and their tributaries. They are designated as excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation, even if not allowed. These waters shall have excellent aesthetic value. These waters are protected as Outstanding Resource Waters.

(b) Class B. These waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment ("Treated Water Supply"). Class B waters shall be suitable

for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.

(a) Class SA. These waters are designated as an excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, excellent habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting without depuration (Approved and Conditionally Approved Shellfish Areas). These waters shall have excellent aesthetic value.

Narrative Standard – 4.05: Classes and Criteria – (3)(a) Class A.

1. Dissolved Oxygen. Shall not be less than 6.0 mg/l in cold water fisheries and not less than 5.0 mg/l in warm water fisheries. Where natural background conditions are lower, DO shall not be less than natural background conditions. Natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained.

2. Temperature. a. Shall not exceed 68° F (20° C) based on the mean of the daily maximum temperature over a seven day period in cold water fisheries, unless naturally occurring. Where a reproducing cold water aquatic community exists at a naturally occurring higher temperature, the temperature necessary to protect the community shall not be exceeded and natural daily and seasonal temperature fluctuations necessary to protect the community shall be maintained. Temperature shall not exceed 83°F (28.3°C) in warm water fisheries. The rise in temperature due to a discharge shall not exceed 1.5°F (0.8°C); and

b. natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. There shall be no changes from natural background conditions that would impair any use assigned to this Class, including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms.

3. pH. Shall be in the range of 6.5 through 8.3 standard units but not more than 0.5 units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

4. Bacteria. b. at bathing beaches as defined by the Massachusetts Department of Public Health in 105 CMR 445.010: where E. coli is the chosen indicator, the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 126 colonies per 100 ml and no single sample taken during the bathing season shall exceed 235 colonies per 100 ml; alternatively, where enterococci are the chosen indicator, the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 33 colonies per 100 ml and no single sample taken during the bathing season shall exceed 61 colonies per 100 ml; [...]

5. Solids. These waters shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

6. Color and Turbidity. These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class.

7. Oil and Grease. These waters shall be free from oil and grease, petrochemicals and other volatile or synthetic organic pollutants. 8. Taste and Odor. None other than of natural origin

Antidegradation – 4.04: Antidegradation Provisions. (3) Protection of Outstanding Resource Waters. Certain waters are designated for protection under this provision in 314 CMR 4.06. These waters include Class A Public Water Supplies [...] and their tributaries, certain wetlands as specified [...] and other waters as determined by the Department based on their outstanding socio-economic, recreational, ecological and/or aesthetic values. The quality of these water shall be protected and maintained.

Wetland Definition – none

Definitions – Surface Waters/Waters of the Commonwealth. All waters other than groundwaters within the jurisdiction of the Commonwealth, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, coastal waters and vernal pools.

Wetlands associated with public water supplies – (4.06.1.3.1) No discharge of dredged or fill materials into wetlands or waters of the Commonwealth shall be allowed within 4400 feet of the high water mark of Class A surface water (exclusive of its tributaries), unless conducted by a public water system under 310 CMR 22.00, conducted by a public agency or authority for the maintenance or repair of existing public roads or railways, or conducted by a person granted a variance pursuant to 314 CMR 9.08.

Michigan

Wetlands are included in the definition of waters of the state. Michigan does not have a wetland-specific designated use, but seven uses apply to all surface waters. Effluent discharges to wetlands that result in water quality that is inconsistent with that prescribed by these rules may be permitted after a use attainability analysis shows that designated uses are not and cannot be attained and shows that attainable uses will be protected. No narrative and numeric criteria are specific to wetlands. Michigan has a Wetland Protection Policy in a separate title.

Michigan has 6,877,766 acres of wetlands (in green) according to the National Wetland Inventory.

Beneficial Use – R 323.1100 Designated uses. Rule 100. (1) At a minimum, all surface waters of the state are designated and protection for all of the following uses:

(a) Agriculture

(b) Navigation

(c) Industrial water supply

(d) Warmwater fishery

(e) Other indigenous aquatic life and wildlife

(f) Partial body contact recreation

(g) Fish consumption

Narrative Standard – R 323.1050-1082

Physical characteristics. Rule 50. The surface waters of the state shall not have any of the following physical properties in unnatural quantities which are or may become injurious to any designated use:

(a) Turbidity.

(b) Color.

(c) Oil films.

(d) Floating solids.

(e) Foams.

(f) Settleable solids.

(g) Suspended solids.

(h) Deposits.

Dissolved solids. Rule 51. (1) The addition of any dissolved solids shall not exceed concentrations which are or may become injurious to any designated use. [...]

Hydrogen ion concentration. Rule 53. The hydrogen ion concentration expressed as pH shall be maintained within the range of 6.5 to 9.0 S.U. in all surface waters of the state, except for those waters where the background pH lies outside the range of 6.5 to 9.0 S.U. Any requests to artificially induce a pH change greater than 0.5 S.U. in surface waters where the background pH lies outside the range of 6.5 to 9.0 S.U., shall be considered by the department on a case-by-case basis

Taste- or odor-producing substances. Rule 55. The surface waters of the state shall contain no taste-producing or odor-producing substances in concentrations which impair or may impair their use for a public, industrial, or agricultural water supply source or which impair the palatability of fish as measured by test procedures approved by the department.

Toxic substances. Rule 57. (1) Toxic substances shall not be present in the surface waters of the state at levels that are or may become injurious to the public health, safety, or welfare, plant and animal life, or the designated uses of the waters. As a minimum level of protection, toxic substances shall not exceed the water quality values specified in, or developed pursuant to, the provisions of subrules (2) to (4) of this rule or conditions set forth by the provisions of subrule (6) of this rule. A variance to these values may be granted consistent with the provisions of R 323.1103. [...]

Radioactive substances. Rule 58. The control and regulation of radioactive substances discharged to the waters of the state shall be pursuant to the criteria, standards, or requirements prescribed by the United States nuclear regulatory commission in 10 C.F.R. §20.1 et seq. and by the United States environmental protection agency.

Plant nutrients. Rule 60. (1) Consistent with Great Lakes protection, phosphorus which is or may readily become available as a plant nutrient shall be controlled from point source discharges to achieve 1 milligram per liter of total phosphorus as a maximum monthly average effluent concentration unless other limits, either higher or lower, are deemed necessary and appropriate by the department.

(2) In addition to the protection provided under subrule (1) of this rule, nutrients shall be limited to the extent necessary to prevent stimulation of growths of aquatic rooted, attached, suspended, and floating plants, fungi or bacteria which are or may become injurious to the designated uses of the surface waters of the state.

Microorganisms. Rule 62. (1) All surface waters of the state protected for total body contact recreation shall not contain more than 130 Escherichia coli (E. coli) per 100 milliliters, as a 30-day geometric mean. [...]

Dissolved oxygen in Great Lakes, connecting waters, and inland streams. Rule 64. (1) A minimum of 7 milligrams per liter of dissolved oxygen in all Great Lakes and connecting waterways shall be maintained, and, except for inland lakes as prescribed in R 323.1065, a minimum of 7 milligrams per liter of dissolved oxygen shall be maintained at all times in all inland waters designated by these rules to be protected for coldwater fish. In all other waters, except for inland lakes as prescribed by R 323.1065, a minimum of 5 milligrams per liter of dissolved oxygen shall be maintained. These standards do not apply for a limited warmwater fishery use subcategory or limited coldwater fishery

use subcategory established pursuant to R 323.1100(11) or during those periods when the standards specified in subrule (2) of this rule apply. [...]

Temperature; general considerations. Rule 69. (1) In all surface waters of the state, the points of temperature measurement normally shall be in the surface 1 meter; however, where turbulence, sinking plumes, discharge inertia or other phenomena upset the natural thermal distribution patterns of receiving waters, temperature measurements shall be required to identify the spatial characteristics of the thermal profile.

(2) Monthly maximum temperatures, based on the ninetieth percentile occurrence of natural water temperatures plus the increase allowed at the edge of the mixing zone and in part on long-term physiological needs of fish, may be exceeded for short periods when natural water temperatures exceed the ninetieth percentile occurrence. Temperature increases during these periods may be permitted by the department, but in all cases shall not be greater than the natural water temperature plus the increase allowed at the edge of the mixing zone.

(3) Natural daily and seasonal temperature fluctuations of the receiving waters shall be preserved.

Mixing zones. Rule 82. (1) A mixing zone is that portion of a water body allocated by the department where a point source or venting groundwater discharge is mixed with the surface waters of the state. [...]

Antidegradation – no wetland-specific rules

Wetland Definition – 40 CFR §116.3

Definitions – "Surface waters of the state" means all of the following, but does not include drainage ways and ponds used solely for wastewater conveyance, treatment, or control: (i) The Great Lakes and their connecting waters. (ii) All inland lakes. (iii) Rivers. (iv) Streams. (v) Impoundments. (vi) Open drains. (vii) Wetlands. (viii) Other surface bodies of water within the confines of the state.

Discharges to wetlands (R 323.1100.10) – Effluent discharges to wetlands that result in water quality that is inconsistent with that prescribed by these rules may be permitted after a use attainability analysis shows that designated uses are not and cannot be attained and shows that attainable uses will be protected.

Wetland Policy – Michigan wetland permitting policy established in the Wetlands Protection Title 281.921-925

Minnesota

Minnesota has a wetland beneficial use that is defined as protecting aquatic and terrestrial life, wildlife habitat, biological diversity, and aquatic recreation, industrial use, irrigation, livestock, erosion control, groundwater recharge, flow augmentation, storm water retention, sedimentation, and aesthetics. Minnesota code has a separate section for wetland standards and mitigation, about half of which is dedicated to Clean Water Act §404. There is one narrative standard for waters of the state; the wetland policy also states that pollution is prohibited, but is not as specific as the statewide narrative. Within the surface water standards code there are exceptions to aquatic life and recreation (2D), industrial (3D), irrigation and livestock (4C), and aesthetic and navigation (5) standards when they are supported by wetlands. Wild rice wetlands are a special subset of agricultural standards. Designate calcareous fens (rare wetland type) and Lake Superior wetlands as special.

Minnesota is mostly wetlands, with 10,673,826 acres of NWI wetlands.

Beneficial Use – Wetland policy (7050.0186 Wetland Standards and Mitigation)

Subpart 1. Policy and wetland beneficial uses. It is the policy of the state to protect wetlands and prevent significant adverse impacts on wetland beneficial uses caused by chemical, physical, biological, or radiological changes. The quality of wetlands shall be maintained to permit the propagation and maintenance of a healthy community of aquatic and terrestrial species indigenous to wetlands, preserve wildlife habitat, and support biological diversity of the landscape. In addition, these waters shall be suitable for boating and other forms of aquatic recreation as specified in part 7050.0222, subpart 6; general industrial use as specified in part 7050.0223, subpart 5; irrigation, use by wildlife and livestock, erosion control, groundwater recharge, low flow augmentation, storm water retention, and stream sedimentation as specified in part 7050.0224 subpart 4; and aesthetic enjoyment as specified in part 7050.0225, subpart 2.

Narrative Standard – 7050.0210 General Standards for Waters of the State of Minnesota

Subp. 2. Nuisance conditions prohibited. No sewage, industrial waste, or other wastes shall be discharged from either point or nonpoint sources into any waters of the state so as to cause any nuisance conditions, such as the presence of significant amounts of floating solids, scum, visible oil film, excessive suspended solids, material discoloration, obnoxious odors, gas ebullition, deleterious sludge deposits, undesirable slimes or fungus growths, aquatic habitat degradation, excessive growths of aquatic plants, or other offensive or harmful effects.

Antidegradation – 7050.0186 Subp 1b. [*Part of wetland policy*]

Wetland pollution prohibited. Wetland conditions shall be protect from chemical, physical, biological, or radiological changes to prevent significant adverse impacts to the designated beneficial uses listed in subpart 1. The antidegradation provisions in this chapter are applicable to wetlands.

Wetland Definition – 40 CFR § 116.3 definition, plus requirement for hydric soils, inundation, hydrophytes

Numeric standard exceptions for wetlands –

7050.0222 Specific water quality standards for class 2 waters of the state; aquatic life and recreation

Subpart 6. Class 2D waters; wetlands.

A. The quality of class 2D wetlands shall be such as to permit the propagation and maintenance of a healthy community of aquatic and terrestrial species indigenous to wetlands, and their habitats. Wetlands also add to the biological diversity of the landscape. These waters shall be suitable for boating and other forms of aquatic recreation for which the wetland may be useable. The standards for class 2B waters listed under subpart 4 shall apply to these water except as listed below:

Substance, characteristic, or pollutant	Class 2D Standard
Oxygen, dissolved	If background is less the 5.0 mg/L as a daily minimum, maintain background
pH	Maintain background
Temperature	Maintain background

B. "Maintain background," as used in this subpart, means the concentration of the water quality substances, characteristics, or pollutant shall not deviate from the range of natural background concentrations or conditions such that there is a potential significant adverse impact to the designated uses.

C. Activities in wetlands which involve the normal farm practices of planting with annually seeded crops or the utilization of a crop rotation seeding of pasture grasses or legumes, including the recommended applications of fertilizer and pesticides, are excluded from the standards in this subpart and the wetland standards in parts 7050.0224, subpart 4; 7050.0225, subpart 2, and 7050.0227. All other activities in these wetlands must meet water quality standards.

7050.0223 Specific water quality standards for class 3 waters of the state; industrial consumption.

Subpart 5. Class 3D waters; wetlands. The quality of 3D wetlands shall be such as to permit their use for general industrial purposes, except for food processing, with only a moderate degree of treatment. The following standards apply:

Substance, characteristics, or pollutant	Class 3D Standard
Chlorides (Cl)	Maintain background
Hardness, Ca+ Mg as CaCO3	Maintain background
pH	Maintain background

7050.0224 Specific water quality standards for class 4 waters of the state; agriculture and wildlife

Subpart 1. General. The numeric and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the agriculture and wildlife designated public uses and benefits. Wild rice is an aquatic plant resource found in certain waters within the state. The harvest and use of grains from this plant serve as a food resource for wildlife and humans. In recognition of the ecological importance of this resource, and in conjunction with Minnesota Indian tribes, selected wild rice waters have been specifically identified [WR] and listed in part 7050.0470, subpart 1. The quality of theses water and the aquatic habitat necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded. If the standards in this part are exceed in waters of the state that have the class 4 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.

Subpart 4. Class 4C waters. The quality of class 4C wetlands shall be such as to permit their use for irrigation and by wildlife and livestock without inhabitation or injurious effects and be suitable for erosion control, groundwater recharge, low flow augmentation, storm water retention, and stream sedimentation. The standards for classes 4A [*irrigation*] and 4B [*livestock and wildlife*] shall apply to these waters except as listed below

Substance, Characteristic, or Pollutant	**Class 4C Standard**
pH	Maintain background
Settleable solids	Shall not be allowed in concentrations sufficient to create the potential for significant adverse impacts on one or more designated uses

7050.0225 Specific water quality standards for Class 5 waters of the state; aesthetic enjoyment and navigation

Subpart 2. Class 5 waters; aesthetic enjoyment and navigation. The quality of class 5 waters of the state shall be such as to be suitable for aesthetic enjoyment of scenery, to avoid any interference with navigation or damaging effects on property. The following standards shall not be exceeded in the waters of the state

Substance, Characteristic, or Pollutant	**Class 5 Standard**	
	For nonwetlands	For wetlands
pH, minimum	6.0	Maintain background
pH, maximum	9.0	Maintain background
Hydrogen sulfide as S	0.02 mg/L	Maintain background

Special Wetlands –

7050.0335 Designated Outstanding Resource Value Waters includes calcareous fens (by name and township/range). 0705.0460 Lake Superior basin wetlands listed as outstanding international waters

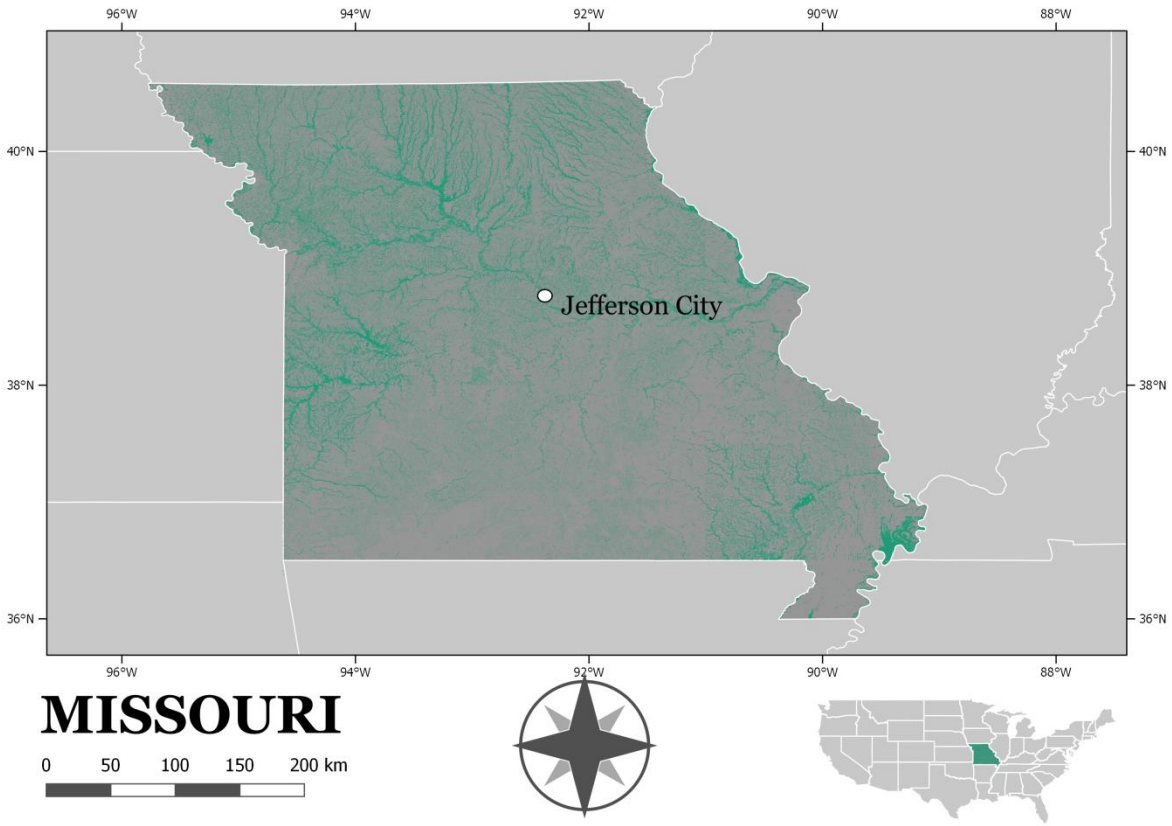
7050.0410 Listed waters. Those waters of the state, except wetlands, that are specifically listed in part 7050.0470 [...] are, in addition to any classifications listed in part 7050.0470, also classified as class 3C, 4A, 4B, 5, and 6 waters. Wetlands that are specifically listed in part 7050.0470 are, in addition to any classifications listed in part 7050.0470, also classified as class 3D, 4C, 5, and 6 waters.

7050.0425 UNLISTED WETLANDS. Those waters of the state that are wetlands as defined in part 7050.0186, subpart 1a, and that are not listed in part 7050.0470 are classified as class 2D, 3D, 4C, 5, and 6 waters.

**Wetland specific section primarily about §404 mitigation*

Missouri

The wetland waterbody class in Missouri can support four potential uses: flood attenuation, habitat, recreation and education, and hydrologic cycling. Developing specific criteria for wetlands will depend on the specific aquatic life, wildlife, and vegetation of a given wetland.



Missouri has 1,559,170 acres of wetlands (in green) according to the National Wetland Inventory.

Beneficial Uses – *10 CSR 20-7.031 Water Quality Standards*

Class W – Wetlands that are waters of the state that meet the criteria in the Corps of Engineers Wetlands Delineation Manual (January 1987), and subsequent federal revisions and supplements. Class W waters do not include wetlands that are artificially created on dry land and maintained for the treatment of mine drainage, stormwater control, drainage associated with road construction, or industrial, municipal, or agricultural waste.

Storm- and flood-water storage attenuation (WSA) – Wetlands and other waters which serve as overflow and storage areas during flood or storm events slowly release water to downstream areas, thus lowering flood peaks and associated damage to life and property.

Habitat for resident and migratory wildlife species, including rare and endangered species (WHP) – Wetlands and other waters that provide essential breeding, nesting, feeding, and predator escape habitats for wildlife including waterfowl, birds, mammals, fish, amphibians, and reptiles.

Recreational, cultural, educational, scientific, and natural aesthetic values and uses (WRC) – Wetlands and other waters that serve as recreational sites for fishing, hunting, and observing wildlife; waters of historic or archaeological significance; waters which provide great diversity for nature observation, educational opportunities, and scientific study.

Hydrologic cycle maintenance (WHC) – Wetlands and other waters hydrologically connected to rivers and streams serve to maintain flow conditions during periods of drought. Waters that are connected hydrologically to the groundwater system recharge groundwater supplies and assume an important local or regional role in maintaining groundwater levels.

Narrative Standard – General Criteria

The following water quality criteria shall be applicable to all waters of the state at all times, including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly, or harmful bottom deposits or prevent full maintenance of beneficial uses;

(B) Waters shall be free from oil, scum, and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.

(C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor, or prevent full maintenance of beneficial uses;

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal, or aquatic life;

(E) There shall be no significant human health hazard from incidental contact with the water;

(F) There shall be no acute toxicity to livestock or wildlife watering;

(G) Waters shall be free from physical, chemical, or hydrologic changes that would impair the natural biological community;

(H) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment, and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to sections 260.200-260.247, RSMo;

(I) Waters in mixing zones, ephemeral aquatic habitat and waters of the state lacking designated uses shall be subject to the following requirements:

1. The acute toxicity criteria of Tables A and B and the requirements of subsection (5) (B); and

2. The following whole effluent toxicity conditions must be satisfied [...]

Antidegradation – no wetland specific language, only rivers are outstanding resources.

Wetland Definition – 40 CFR §116.3

Wetland-Specific Criteria –

5. For wetlands. Water quality needs will vary depending on the individual characteristics of the wetland. Application of numeric criteria will depend on the specific aquatic life, wildlife, and vegetation requirements.

A. Specific criteria for wetlands shall be developed using scientific procedures including, but not limited to, those procedures described in the U.S. Environmental Protection Agency's *Water Quality Standards Handbook [...]*, which are hereby incorporated by reference and do not include any later amendments or additions. The department shall maintain a copy of the referenced documents and shall make them available to the public for inspection and copying at no more than the actual cost of reproduction.

B. Specific criteria shall protect all life stages of species associated with wetlands and prevent acute and chronic toxicity in all parts of the wetland.

C. Specific criteria shall include both chronic and acute concentrations to better reflect the different tolerances to the inherent variability between concentrations and toxicological characteristics of a condition.

D. Specific criteria shall be clearly identified as maximum "not to be exceeded" or average values, and if an average, the averaging period and the minimum number of samples. The conditions, if any,

when the criteria apply shall be clearly stated (e.g., specific levels of hardness, pH, or water temperature). Specific sampling requirements (e.g., location, frequency), if any, shall also be identified.

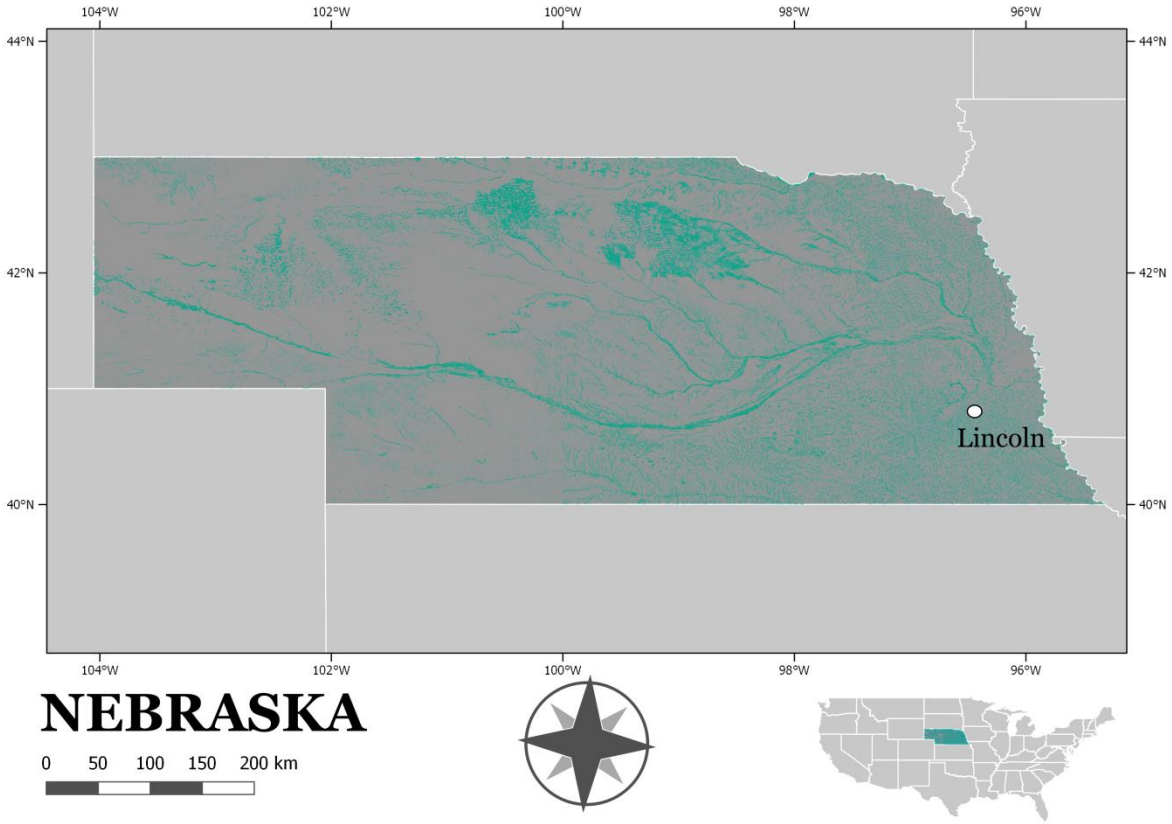
E. The data, testing procedures, and application (safety) factors used to develop specific criteria shall reflect the nature of the condition (e.g., the persistency, bioaccumulation potential) and the most sensitive species associated with the wetland.

F. Each specific criterion shall be promulgated in rule 10 CSR 20-7.031. The public notice shall include a description of the affected wetland and the reasons for applying the proposed criterion. A public hearing may be held in the geographic vicinity of the affected wetland.

**There are no tables yet for wetland water body use designations.*

Nebraska

Surface waters definition includes wetlands (and ponds and marshes); code has a separate chapter for applying water quality standards to wetlands that addresses water quality variability. Define two categories of wetlands (overflow and isolated) with four beneficial uses: aquatic life, wildlife, agricultural water supply and aesthetics. Nebraska has a separate narrative standard for each beneficial use in the wetlands chapter; parameters like pH will be established at 'background levels.' Agricultural impacts not considered for wetlands.



Nebraska has 881,853 acres of wetlands according to NWI.

Beneficial Uses – Chapter 7-004. Beneficial uses assigned to all wetlands are: Aquatic Life, Wildlife, Agricultural Water Supply, and Aesthetics.

These uses are not intended in any way to conflict with the quantitative beneficial uses provided for in Neb. Rev. Stat., Ch. 46, regulating irrigation or the authority of Nebraska Department of Natural Resources.

004.01 Aquatic Life. Wetlands assigned this beneficial use provide, or could provide, habitat capable of supporting aquatic biota on a regular or periodic basis. Aquatic biota are life forms which require water to fulfill basic life functions such as reproduction, growth, and development. Examples of aquatic biota include, but are not limited to, fish, macroinvertebrates, amphibians, and hydrophytic vegetation.

004.02. Wildlife. Wetlands assigned this beneficial use provide, or could provide, habitat capable of supporting wildlife on a regular or periodic basis. Wildlife are undomesticated terrestrial or avian life forms which may utilize wetlands to support life functions such as watering, feeding, loafing, predator protection, and nesting. Examples of wildlife include, but are not limited to, furbearers, waterfowl, shorebirds, migratory birds, and reptiles.

004.03 Agricultural Water Supply. Wetlands assigned to this beneficial use are used or have the potential to be used for general agricultural purposes (e.g., irrigation and livestock watering) without treatment. In some cases, however, natural background water quality may limit their use for agricultural purposes.

004.04 Aesthetics. This use applied to all wetlands of the state.

Narrative Standard – 004.01 Aquatic Life. (A) General Criteria.

004.01 Aquatic Life. (A) General Criteria. Water quality criteria are established to protect assigned beneficial uses. However, traditional water quality parameters in wetlands such as pH, temperature, dissolved oxygen, ammonia, chloride, and conductivity may naturally vary outside accepted ranges for other surface waters. Water quality criteria for specific wetlands or wetland complexes, except numerical criteria for toxic substances [...], petroleum oil [...], and residual chlorine [...], shall be based on natural background values for traditional water quality parameters. However, these criteria shall be no more stringent than those associated with the Class B Warmwater Aquatic Life Classification or the General Criteria for Aquatic Life of Chapter 4 [....].

The biological integrity of wetlands shall be maintained and protected. Any human activity causing water pollution which would significantly degrade the biological integrity of wetlands is a violation of these Standards. Upland soil and water conservation practices or normal farming, silviculture, and ranching activities involving tilling, seeding, cultivating, harvesting, and grazing for the production of food, fiber, and forest products, shall not be considered to cause significant degradation of biological integrity in wetlands. However, the criteria in section 004.01C for toxic substances are applicable to wetlands where such toxic substances are the result of activities listed within this subsection.

004.01B1 Any human activity causing water pollution which would cause a significant adverse impact to an identified "key species" is a violation of these Standards. [*List Key plant species, which are endangered species... which includes Salicornia rubra.*]

[*Long list of toxics*]

004.02. Wildlife. 004.02A General Criteria. Because wildlife utilizing wetlands rely on aquatic biota in many cases for food and habitat, general criteria and toxic criteria listed for the protection of aquatic life shall also apply for the protection of wildlife.

004.02B Biological Criteria. Any human activity causing water pollution which would cause a significant adverse impact to an identified "key species" is a violation of these Standards. [*List T&E wildlife species*]

004.03 Agricultural Water Supply. 004.03A General Criteria. Wastes or toxic substances introduced directly or indirectly by human activity in concentrations that would degrade the use (i.e., would produce undesirable physiological effects in crops or livestock) shall not be allowed. Where natural background water quality limits the use of a wetland for agricultural purposes, water quality criteria for conductivity and selenium shall be based on natural background condition. [*numeric criteria for conductivity, nitrate and nitrite, selenium*]

004.04 Aesthetics. This use applied to all wetlands of the state. To be aesthetically acceptable, wetlands shall be free from human-induced pollution which causes: 1) noxious odors; 2) floating, suspended, colloidal, or settleable materials that produce objectionable films, colors, turbidity, or deposits; and 3) the occurrence of undesirable or nuisance aquatic life (e.g., algal blooms). Wetlands shall also be free of junk, refuse, and discarded dead animals.

Wetland Definition – 40 CFR § 116.3

Antidegradation – No wetland-specific language

State Resource Waters - Class A - These are surface waters, whether or not they are designated in these Standards, which constitute an outstanding State or National resource, such as waters within national or state parks, national forests or wildlife refuges, and waters of exceptional recreational or ecological significance. Waters which provide a unique habitat for federally designated endangered or

threatened species and rivers designated under the Wild and Scenic Rivers Act are also included. The existing quality of these surface waters shall be maintained and protected.

Surface water definition & logic on applying standards to wetlands –

Chapter 1-067 "Surface Waters" shall mean all waters within the jurisdiction of this State, including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, springs, canal systems, and all other bodies or accumulations of water, natural or artificial, public or private, situated wholly or partly within or bordering upon the State. Impounded waters in this definition do not include areas designated by the Department as wastewater treatment or wastewater retention facilities or irrigation reuse pits.

Chapter 7: Water Quality Standards for Wetlands – 001 The dynamic nature of wetlands requires standards which recognize their variability of natural water quality both through time at individual sites and between sites across the State. Wetland classifications, beneficial uses, and water quality criteria contained in this chapter reflect the unique characteristics in Nebraska.

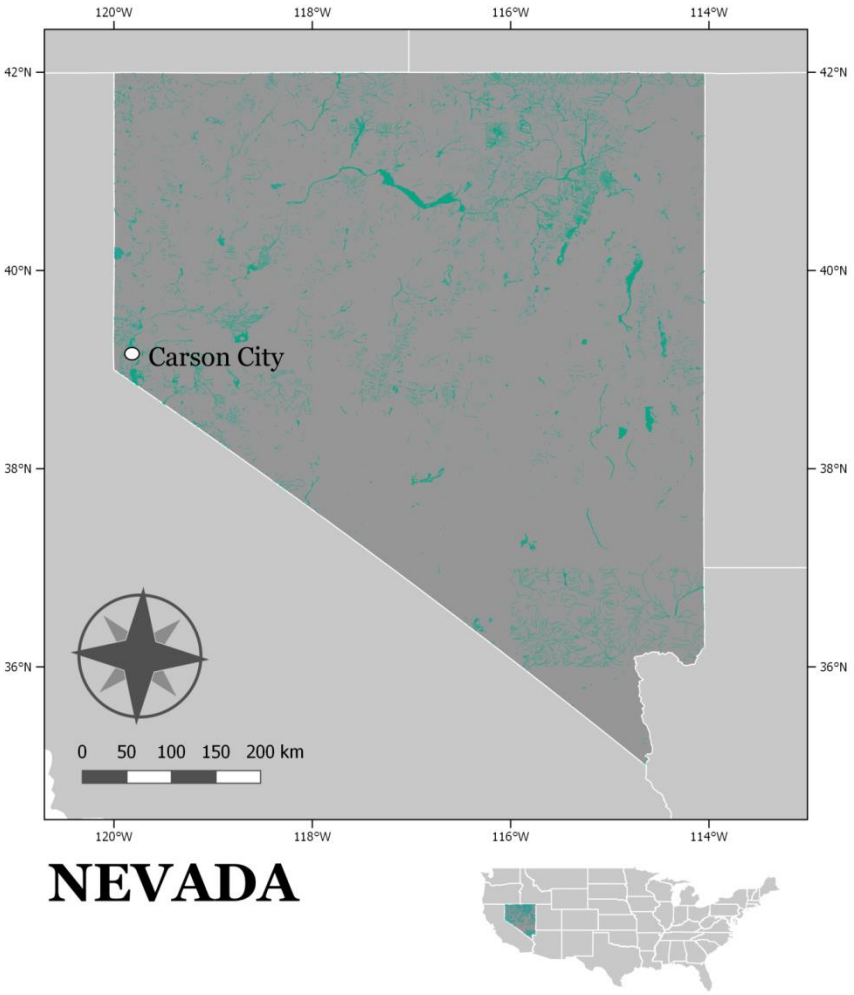
002 – Application of Standards to Wetlands 002.01 These standards shall apply to all natural wetlands and all artificial wetlands except as provided in paragraph 002.02 [*wastewater treatment*]. Numerical criteria which rely on water in order to be measured, shall not be deemed applicable during periods when water is not present.

002.03 – No mixing zones shall be allowed within wetlands.

003 Wetland Classifications. Wetlands are classified into two categories based on hydrological characteristics which affect the attainable beneficial uses. For purposes of these standards, the two general classifications are surface-water overflow wetlands and isolated wetlands. Within each classification specific wetland complexes and individual wetlands may be identified by their physical, chemical, and biological characteristics and functional values.

Nevada

Nevada has 'marsh' and 'enhancement of water quality' beneficial uses, but they only apply to a few creeks or washes in individual water use regions. Regions have established numeric standards for each beneficial use. The term 'wetland' is only mentioned with regard to environmental impact statements, the definition of surface waters does not include wetlands or marshes.



The NWI has mapped 948,489 acres of wetlands in Nevada.

Beneficial Use – NAC 445A.122

Marsh – Maintenance of a freshwater marsh

**Designated only for Las Vegas Wash in the Colorado Region*

Enhance – Enhancement of water quality – The water must support natural enhancement or improvement of water quality in any water which is downstream

**Designated only for Lake Tahoe tributaries in the Truckee Region*

Narrative Standard – NAC 445A.121 Standards applicable to all surface waters.

The following standards are applicable to all surface waters of the State:

1. Waters must be free from substances attributable to domestic or industrial waste or other controllable sources that will settle to form sludge or bottom deposits in amounts sufficient to be unsightly, putrescent or odorous or in amounts sufficient to interfere with any beneficial use of the water.

2. Waters must be free from floating debris, oil, grease, scum and other floating materials attributable to domestic or industrial waste or other controllable sources in amounts sufficient to be unsightly or in amounts sufficient to interfere with any beneficial use of the water.

3. Waters must be free from materials attributable to domestic or industrial waste or other controllable sources in amounts sufficient to produce taste or odor in the water or detectable off-flavor in the flesh of fish or in amounts sufficient to change the existing color, turbidity or other conditions in the receiving stream to such a degree as to create a public nuisance or in amounts sufficient to interfere with any beneficial use of the water.

4. Waters must be free from high temperature, biocides, organisms pathogenic to human beings, toxic, corrosive or other deleterious substances attributable to domestic or industrial waste or other controllable sources at levels or combinations sufficient to be toxic to human, animal, plant or aquatic life or in amounts sufficient to interfere with any beneficial use of the water. Compliance with the provisions of this subsection may be determined in accordance with methods of testing prescribed by the Department. If used as an indicator, survival of test organisms must not be significantly less in test water than in control water.

6. Radioactive materials attributable to municipal, industrial or other controllable sources must be the minimum concentrations that are physically and economically feasible to achieve. In no case must materials exceed the limits established in the 1962 Public Health Service Drinking Water Standards (or later amendments) or 1/30th of the MPC values given for continuous occupational exposure in the "National Bureau of Standards Handbook No. 69." The concentrations in water must not result in accumulation of radioactivity in plants or animals that result in a hazard to humans or harm to aquatic life.

7. Wastes from municipal, industrial or other controllable sources containing arsenic, barium, boron, cadmium, chromium, cyanide, fluoride, lead, selenium, silver, copper and zinc that are reasonably amenable to treatment or control must not be discharged untreated or uncontrolled into the waters of Nevada. In addition, the limits for concentrations of the chemical constituents must provide water quality consistent with the mandatory requirements of the 1962 Public Health Service Drinking Water Standards.

8. The specified standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of extreme high or low flow. Where effluents are discharged to such waters, the discharges are not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained.

Antidegradation – no antidegradation section

Wetland Definition – "Wetland" means land that:

(1) Has a predominance of hydric soil;

(2) Is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions; and

(3) Under normal circumstances does support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions.

Numeric Standards for Marsh and Enhancement beneficial uses –

Marsh - Colorado Region – Las Vegas Wash:

Total dissolved solids: single value ≤3000

Dissolved Oxygen: aerobic conditions are desirable for the beneficial uses of propagation of aquatic life, excluding fish, watering of livestock, recreation not involving contact with water and propagation of wildlife. So as not to prevent the development and restoration of marshes and wetlands in the Las Vegas Wash, aerobic conditions are established as a goal rather than a standard and the goal is not intended to preclude development of a limited fishery in selected areas. Aerobic conditions is intended to mean the absence of objectionable odors that may be caused by wastewater discharges in excess of existing odors.

Enhance - Truckee Region – Lake Tahoe Tributes

Total Phosphates: annual average ≤ 0.05 mg/l

Nitrogen Species (as N): nitrate single value ≤10.0 mg/l, nitrite single value ≤ 0.06 mg/l

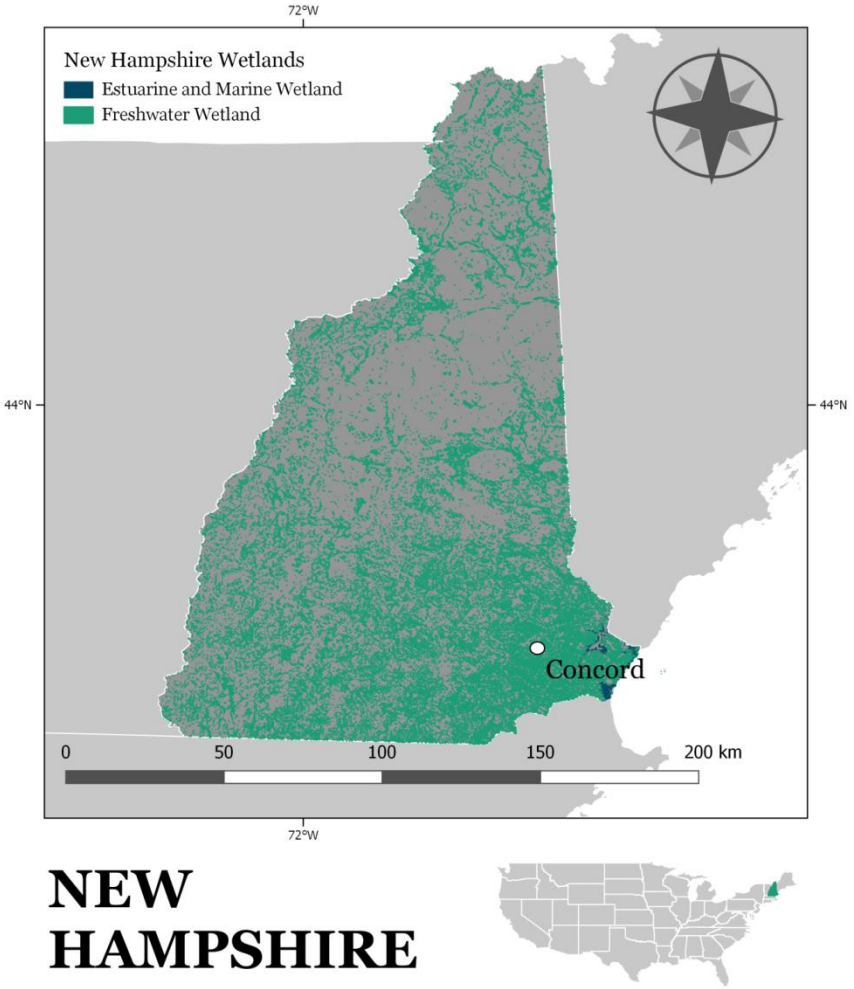
Total suspended solids: single value ≤ 25.0

Turbidity: single value ≤10.0 NTU

Color: PCU single value ≤75.0

New Hampshire

New Hampshire waters are classified by water quality: higher and 2nd highest. New Hampshire has a section of code for applying criteria (narrative or numeric) to wetlands, but no uses specific to wetlands. Code specifies naturally occurring conditions are the applicable water quality criteria for wetlands.



New Hampshire has 296,617 acres of NWI wetlands.

Designated Uses – Env-Wq 1701-01 Purpose.

> [...] These standards provide for the protection and propagation of fish, shellfish, and wildlife, and provide for such uses as recreational activities in and on the surface waters, public water supplies, agricultural and industrial uses, and navigation [...]

Env-Wq 1703.01 Water Use Classifications

> (a) State surface waters shall be divided into class A [*highest quality*] and class B [*second highest quality*], pursuant to RSA 485-A:8, I, II and III [*Water Management and Protection*]. Each class shall identify the most sensitive use which it is intended to protect.

(b) All surface waters shall be restored to meet the water quality criteria for their designated classification including existing and designated uses, and to maintain the chemical, physical, and biological integrity of surface waters.

(c) All surface waters shall provide, wherever attainable, for the protection and propagation of fish, shellfish and wildlife, and for recreation in and on the surface waters.

(d) Unless the flows are caused by naturally occurring conditions, surface water quantity shall be maintained at levels adequate to protect existing and designated uses.

Wetlands criteria – Env-Wq 1703.02

(a) Subject to (b), below, wetlands shall be subject to the criteria listed in this part.

(b) Wherever the naturally occurring conditions of the wetlands are different from the criteria listed in these rules, the naturally occurring conditions shall be the applicable water quality criteria.

Narrative Standard – Env-Wq 1703.03 General Water Quality Criteria.

(a) The presence of pollutants in the surface waters shall not justify further introduction of pollutants from point or nonpoint sources, alone or in any combination.

(b) State surface waters shall retain their legislated classification even if they fail to meet any or all of the general, class-specific, or toxic criteria contained in this part.

(c) The following physical, chemical and biological criteria shall apply to all surface waters:

(1) All surface waters shall be free from substances in kind or quantity which:

a. Settle to form harmful deposits;

b. Float as foam, debris, scum or other visible substances;

c. Produce odor, color, taste or turbidity which is not naturally occurring and would render it unsuitable for its designated uses;

d. Result in the dominance of nuisance species; or

e. Interfere with recreational activities;

(2) The level of radioactive materials in all surface waters shall not be in concentrations or combinations that would:

a. Be harmful to human, animal or aquatic life or the most sensitive designated use;

b. Result in radionuclides in aquatic life exceeding the recommended limits for consumption by humans; or

c. Exceed limits specified in EPA's national drinking water regulations or Env-Wq 300 or successor rules in subtitle Env-Dw, whichever are more stringent; and

(3) Tainting substances shall not be present in concentrations that individually or in combination are detectable by taste and odor tests performed on the edible portions of aquatic organisms.

Antidegradation – nothing wetland specific, applies to flow alterations and hydrologic modifications

Wetland Definition – Wetlands 40 CFR § 116.3

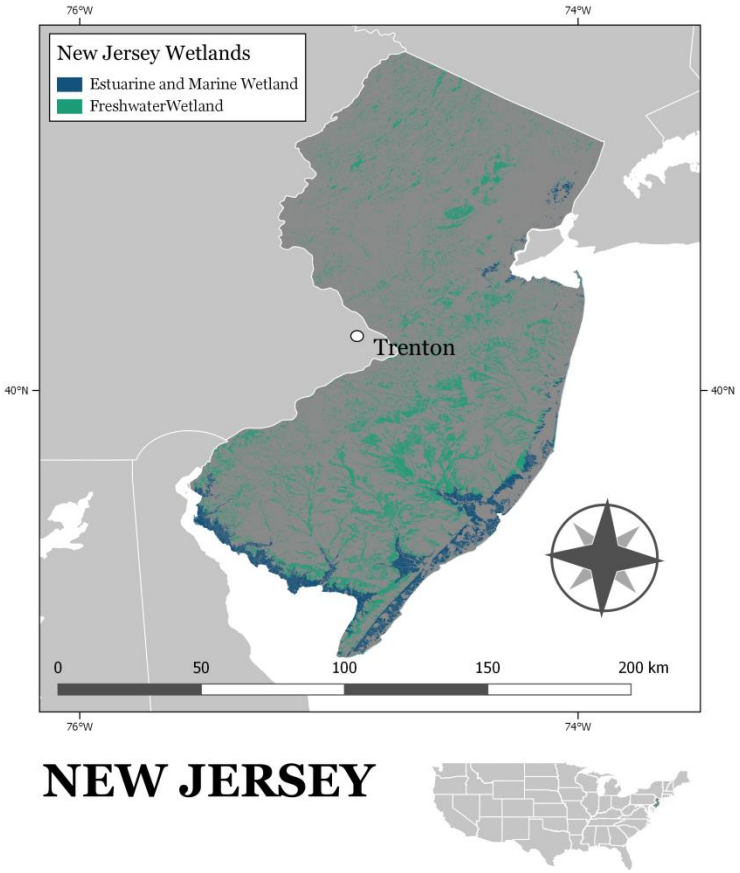
Definitions –

Env-Wq 1702.29 "Naturally occurring conditions" means conditions which exist in the absence of human influences.

Env-Wq 1702.34 "Nuisance species" means any species of flora or fauna living in or near the water whose noxious characteristics or presence in sufficient number or mass prevent or interfere with a designated use of those surface waters.

New Jersey

Wetlands are included in the definition of surface waters and are defined in the code, but there is no clear use that applies to wetlands. Unclassified lakes and ponds <5 acres in size are classified as FW2-TM (freshwater trout management) and FW2-NT (freshwater no trout). Many refuges and wildlife management areas are classified waters and Outstanding Natural Resources waters.



New Jersey has 907,807 acres of wetlands according to the National Wetland Inventory.

Beneficial Use – 7:9B-1.15 Surface water classifications for the waters of the State of New Jersey

iii. All freshwater lakes, ponds and reservoirs, that are less than five acres in surface area, upstream of and contiguous with FW2-TP or FW2-TM streams, and which are not located entirely within the Pinelands Area boundaries (see(b)5vii below) are classified as FW2-TM. All other freshwater lakes, ponds and reservoirs that are not otherwise classified in this subsection or the following tables are classified as FW2-NT. If the waterbody could be a C1 water, also check (b)5vi below.

iv. Unnamed or unlisted streams that enter FW2 lakes, ponds and reservoirs take the classification of either the listed tributary stream flowing into the lake with the highest classification or the listed tributary stream leaving the lake with the highest classification, whichever has the highest classification, or, if there are no listed tributary or outlet streams to the lake, the first listed stream downstream of the lake. If the stream is located within the boundaries of the Pinelands Area, see (b)5.vii. below; if it could be a C1 water, also see (b)5vi below.

7:9B-1.12 Designated uses of FW1, PL, FW2, SE1, SE2, SE3, and SC waters

(c) In all FW2 waters the designated uses are:

1. Maintenance, migration and propagation of the natural and established biota;

2. Primary contact recreation;

3. Industrial and agricultural water supply;

4. Public potable water supply after conventional filtration treatment (a series of processes including filtration, flocculation, coagulation, and sedimentation, resulting in substantial particulate removal but no consistent removal of chemical constituents) and disinfection; and

5. Any other reasonable uses.

Many refuges and wildlife management areas are classified waters; 'swamp' in many names

Narrative Standard – 7:9B-1.14 Surface water quality criteria

(d) Surface Water Quality Criteria for FW2, SE and SC Waters:

1. Bacterial quality (Counts/100 ml) - E. Coli levels shall not exceed a geometric mean of 126/100 ml or a single sample maximum of 235/100 ml. (All FW2)

2. Dissolved oxygen (mg/L) - ii. 24 hour average not less than 6.0. Not less than 5.0 at any time (see paragraph viii below); (FW2-TM)

viii. Supersaturated dissolved oxygen values shall be expressed as their corresponding 100 percent saturation values for purposes of calculating 24 hour averages. (FW2-TM, FW2-NT, SE1)

3. Floating, colloidal, color and settleable solids; petroleum hydrocarbons and other oils and grease - None noticeable in the water or deposited along the shore or on the aquatic substrata in quantities detrimental to the natural biota. None which would render the waters unsuitable for the designated uses. (All Classifications)

4. Nutrients - Except as due to natural conditions, nutrients shall not be allowed in concentrations that render the waters unsuitable for the existing or designated uses due to objectionable algal densities, nuisance aquatic vegetation, diurnal fluctuations in dissolved oxygen or pH indicative of excessive photosynthetic activity, detrimental changes to the composition of aquatic ecosystems, or other indicators of use impairment caused by nutrients. (All Classifications)

ii. Phosphorus (mg/L) (1) Non Tidal Streams: Concentrations of total P shall not exceed 0.1 in any stream, unless watershed specific translators are established pursuant to N.J.A.C. 7:9B-1.5(g)2 or if the Department determines that concentrations do not render the waters unsuitable in accordance with (d)4i. above. (FW2)

(2) Lakes: Concentrations of total P shall not exceed 0.05 in any lake, pond or reservoir, or in a tributary at the point where it enters such bodies of water, unless watershed-specific translators are developed pursuant to N.J.A.C. 7:9B-1.5(g)2 or if the Department determines that concentrations do not render the waters unsuitable in accordance with (d)4i. above. (FW2)

5. pH (Standard Units) - i. 6.5-8.5 (FW2 waters listed at 1.15(d), (f), (g) and (i), All SE)

ii. 4.5 – 7.5 (FW2 waters listed at 1.15(c), (e) and (h))

6. Radioactivity i. Prevailing regulations including all amendments and future supplements thereto adopted by the U.S. Environmental Protection Agency pursuant to Sections 1412, 1445, and 1450 of the Public Health Services Act, as amended by the Safe Drinking Water Act (PL 93-523) (All Classifications)

7. Solids, Suspended (mg/L) (Non-filterable residue) i. 25.0 (FW2-TP, FW2-TM)

ii. 40.0 (FW2-NT)

8. Solids, Total Dissolved (mg/L) (Filterable Residue) - i. No increase in background which may adversely affect the survival, growth or propagation of the aquatic biota. Compliance with water quality-based WET limitations or LC50 ≥ 50 percent, whichever is more stringent, shall be deemed to meet this requirement. (FW2)

ii. No increase in background which would interfere with the designated or existing uses, or 500 mg/L, whichever is more stringent. (FW2)

9. Sulfate (mg/L) i. 250 (FW2)

10. Taste and odor producing substances i. None offensive to humans or which would produce offensive taste or odors in water supplies and biota used for human consumption. None which would render the water unsuitable for the designated uses. (All Classifications)

11. Temperature - ii. Temperatures shall not exceed a daily maximum of 25 degrees Celsius or rolling seven-day average of the daily maximum of 23 degrees Celsius, unless due to natural conditions (FW2-TM)

iii. Temperatures shall not exceed a daily maximum of 31 degrees Celsius or rolling seven-day average of the daily maximum of 28 degrees Celsius, unless due to natural conditions (FW2-NT)

12. Toxic Substances (general) i. None, either alone or in combination with other substances, in such concentrations as to affect humans or be detrimental to the natural aquatic biota, produce undesirable aquatic life, or which would render the waters unsuitable for the designated uses. (All Classifications)

ii. None which would cause standards for drinking water to be exceeded after appropriate treatment. (FW2)

iii. Toxic substances shall not be present in concentrations that cause acute or chronic toxicity to aquatic biota, or bioaccumulate within an organism to concentrations that exert a toxic effect on that organism or render it unfit for consumption. (All Classifications)

iv. The concentrations of nonpersistent toxic substances in the State's waters shall not exceed one-twentieth (0.05) of the acute definitive LC50 or EC50 value, as determined by appropriate bioassays conducted in accordance with N.J.A.C. 7:18. (All Classifications)

v. The concentration of persistent toxic substances in the State's waters shall not exceed one-hundredth (0.01) of the acute definitive LC50 or EC50 value, as determined by appropriate bioassays conducted in accordance with N.J.A.C. 7:18. (All Classifications)

13. Turbidity (Nephelometric Turbidity Unit-NTU) i. Maximum 30-day average of 15 NTU, a maximum of 50 NTU at any time. (FW2, SE3)

Antidegradation – "Outstanding National Resource Waters" or "ONRW" means high quality waters that constitute an outstanding national resource (for example, waters of National/State Parks and Wildlife Refuges and waters of exceptional recreational or ecological significance). Waters classified as FW1 waters and Pinelands waters are Outstanding National Resource Waters.

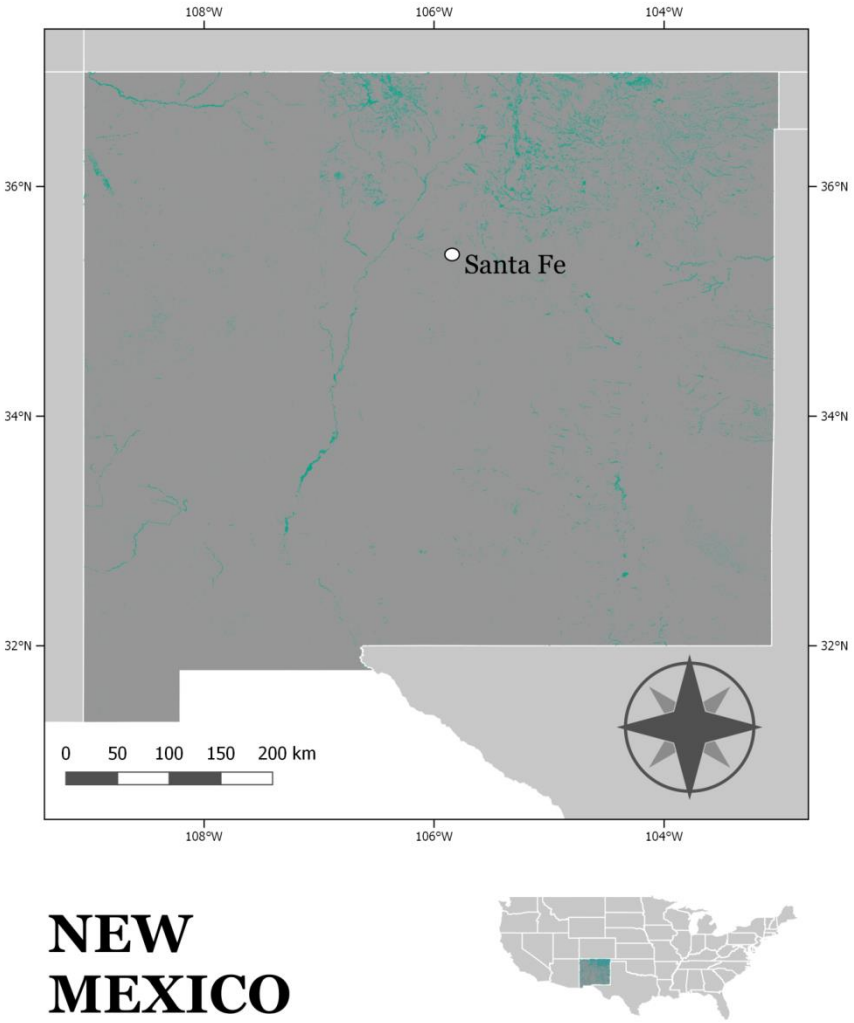
Wetland Definition – 40 CFR §116.3 + The Department shall evaluate the parameters of hydrology, soils, and vegetation to determine the presence and extent of wetlands.

Definitions – "Surface waters" means water at or above the land's surface which is neither groundwater nor contained within the unsaturated zone, including, but not limited to, the ocean and its tributaries, all springs, streams, rivers, lakes, ponds, wetlands, and artificial waterbodies.

"Waters of the State" means the ocean and its estuaries, all springs, streams, wetlands, and bodies of surface or ground water, whether natural or artificial, within the boundaries of the State of New Jersey or subject to its jurisdiction.

New Mexico

Wetlands are included in the New Mexico surface water definition, which includes several wetland types. The default warm-water aquatic life uses of unlisted waters are different for perennial, intermittent, ephemeral streams. New Mexico has 6 aquatic life uses and a separate wildlife use.



NWI has 309,051 acres of mapped wetlands in New Mexico.

Beneficial Use *– No specific uses for wetlands*

20.6.4.11(H). Unclassified Waters of the State: Unclassified waters of the state are those surface waters of the state not identified in 20.6.4.101 through 20.6.4.899 NMAC. An unclassified surface water of the state is presumed to support the uses specified in Section 101(a) (2) of the federal Clean Water Act. As such, it is subject to 20.6.4.98 NMAC if nonperennial or subject to 20.6.4.99 NMAC if perennial.

Perennial – warmwater aquatic life, livestock watering, wildlife habitat and primary contact

Intermittent – livestock watering, wildlife habitat, marginal warmwater aquatic life and primary contact

Ephemeral – livestock watering, wildlife habitat, limited aquatic life and secondary contact

Aquatic life uses: coldwater, marginal coldwater, coolwater, warmwater, marginal warmwater, limited aquatic life

"Aquatic life" means any plant or animal life that uses surface water as a primary habitat for at least a portion of its life cycle, but does not include avian or mammalian species.

"Limited aquatic life" as a designated use, means the surface water is capable of supporting only a limited community of aquatic life. This subcategory includes surface waters that support aquatic species selectively adapted to take advantage of naturally occurring rapid environmental changes, ephemeral or intermittent water, high turbidity, fluctuating temperature, low dissolved oxygen content or unique chemical characteristics.

Wildlife Habitat: means surface water of the state used by plants and animals not considered as pathogens, vectors for pathogens or intermediate hosts for pathogens for humans or domesticated livestock.

Narrative Standard – 20.6.4.13 GENERAL CRITERIA:

General criteria are established to sustain and protect existing or attainable uses of surface waters of the state. These general criteria apply to all surface waters of the state at all times, unless a specified criterion is provided elsewhere in this part. Surface waters of the state shall be free of any water contaminant in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life or property, or unreasonably interfere with the public welfare or the use of property.

A. Bottom Deposits and Suspended or Settleable Solids:

(1) Surface waters of the state shall be free of water contaminants including fine sediment particles (less than two millimeters in diameter), precipitates or organic or inorganic solids from other than natural causes that have settled to form layers on or fill the interstices of the natural or dominant substrate in quantities that damage or impair the normal growth, function or reproduction of aquatic life or significantly alter the physical or chemical properties of the bottom.

(2) Suspended or settleable solids from other than natural causes shall not be present in surface waters of the state in quantities that damage or impair the normal growth, function or reproduction of aquatic life or adversely affect other designated uses.

B. Floating Solids, Oil and Grease: Surface waters of the state shall be free of oils, scum, grease and other floating materials resulting from other than natural causes that would cause the formation of a visible sheen or visible deposits on the bottom or shoreline, or would damage or impair the normal growth, function or reproduction of human, animal, plant or aquatic life.

C. Color: Color-producing materials resulting from other than natural causes shall not create an aesthetically undesirable condition nor shall color impair the use of the water by desirable aquatic life presently common in surface waters of the state.

D. Organoleptic Quality:

(1) Flavor of Fish: Water contaminants from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish.

(2) Odor and Taste of Water: Water contaminants from other than natural causes shall be limited to concentrations that will not result in offensive odor or taste arising in a surface water of the state or otherwise interfere with the reasonable use of the water.

E. Plant Nutrients: Plant nutrients from other than natural causes shall not be present in concentrations that will produce undesirable aquatic life or result in a dominance of nuisance species in surface waters of the state.

F. Toxic Pollutants:

(1) Except as provided in 20.6.4.16 NMAC, surface waters of the state shall be free of toxic pollutants from other than natural causes in amounts, concentrations or combinations that affect

the propagation of 20.6.4 NMAC 16 fish or that are toxic to humans, livestock or other animals, fish or other aquatic organisms, wildlife using aquatic environments for habitation or aquatic organisms for food, or that will or can reasonably be expected to bioaccumulate in tissues of fish, shellfish and other aquatic organisms to levels that will impair the health of aquatic organisms or wildlife or result in unacceptable tastes, odors or health risks to human consumers of aquatic organisms.

G. Radioactivity: The radioactivity of surface waters of the state shall be maintained at the lowest practical level and shall in no case exceed the criteria set forth in the New Mexico Radiation Protection Regulations, 20.3.1 and 20.3.4 NMAC.

H. Pathogens: Surface waters of the state shall be free of pathogens from other than natural causes in sufficient quantity to impair public health or the designated, existing or attainable uses of a surface water of the state.

I. Temperature: Maximum temperatures for surface waters of the state have been specified in 20.6.4.97 through 20.6.4.900 NMAC. However, the introduction of heat by other than natural causes shall not increase the temperature, as measured from above the point of introduction, by more than 2.7°C (5°F) in a stream, or more than 1.7°C (3°F) in a lake or reservoir. In no case will the introduction of heat be permitted when the maximum temperature specified for the reach would thereby be exceeded. These temperature criteria shall not apply to impoundments constructed offstream for the purpose of heat disposal. High water temperatures caused by unusually high ambient air temperatures are not violations of these criteria.

J. Turbidity: Turbidity attributable to other than natural causes shall not reduce light transmission to the point that the normal growth, function or reproduction of aquatic life is impaired or that will cause substantial visible contrast with the natural appearance of the water. Activities or discharges shall not cause turbidity to 20.6.4 NMAC 17 increase more than 10 NTU over background turbidity when the background turbidity, measured at a point immediately upstream of the activity, is 50 NTU or less, nor to increase more than 20 percent when the background turbidity is more than 50 NTU. However, limited-duration turbidity increases caused by dredging, construction or other similar activities may be allowed provided all practicable turbidity control techniques have been applied and all appropriate permits, certifications and approvals have been obtained.

K. Total Dissolved Solids (TDS): TDS attributable to other than natural causes shall not damage or impair the normal growth, function or reproduction of animal, plant or aquatic life. TDS shall be measured by either the "calculation method" (sum of constituents) or the filterable residue method. Approved test procedures for these determinations are set forth in 20.6.4.14 NMAC.

L. Dissolved Gases: Surface waters of the state shall be free of nitrogen and other dissolved gases at levels above 110 percent saturation when this supersaturation is attributable to municipal, industrial or other discharges.

M. Biological integrity: Surface waters of the state shall support and maintain a balanced and integrated community of aquatic organisms with species composition, diversity and functional organization comparable to those of natural or minimally impacted water bodies of a similar type and region. [20.6.4.13 NMAC - Rp 20 NMAC 6.1.1105, 10-12-00; A, 10-11-02; Rn, 20.6.4.12 NMAC, 05-23-05; A, 05-23-05; A, 12-01-10]

Antidegradation – wetlands in Forest Service wilderness areas are Outstanding National Resource Waters

Wetland Definition – 40 CFR §116.3 + regional wetland types + constructed wetlands

Definitions –

"Surface water(s) of the state" means all surface waters situated wholly or partly within or bordering upon the state, including lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows playa lakes, reservoirs or natural ponds. Surface waters of the state also means all tributaries of such waters, including adjacent wetlands, any manmade bodies of water that were originally created in surface waters of the state or resulted in the impoundment of surface waters of the state, and any "waters of the United States" as defined under

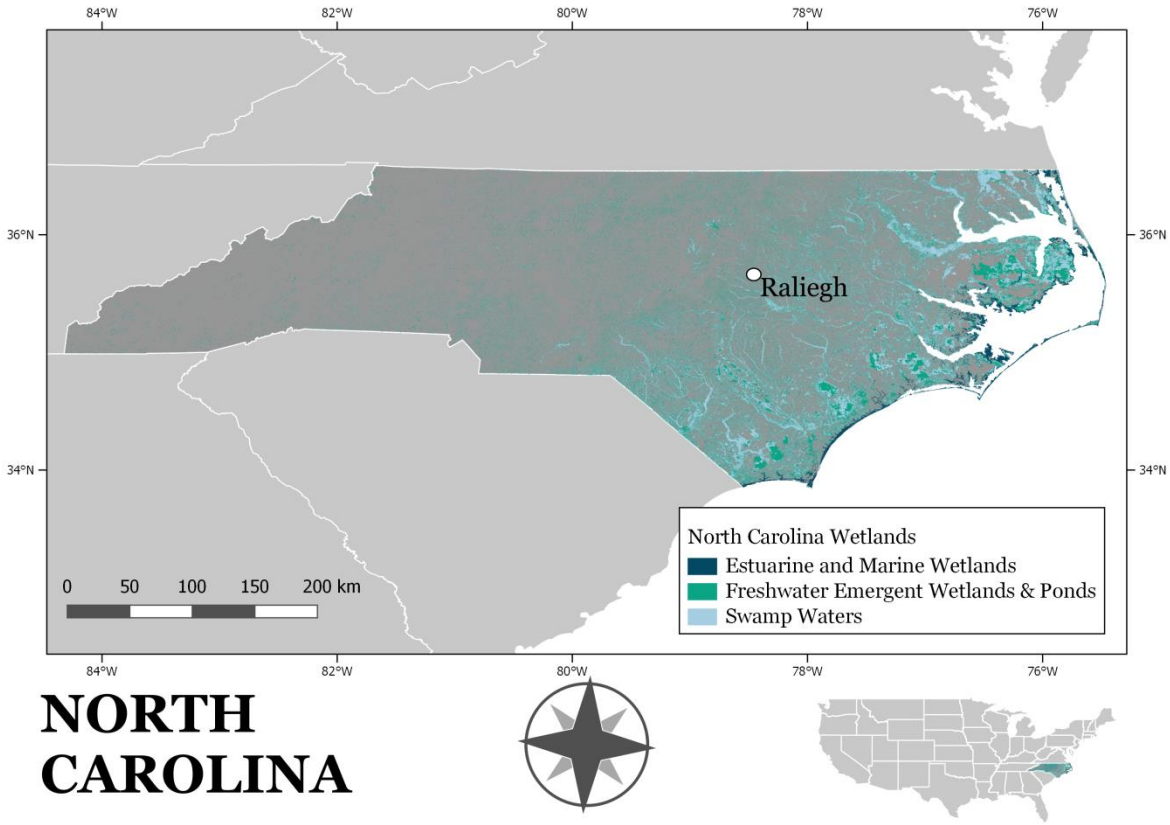
the Clean Water Act that are not included in the preceding description. Surface waters of the state does not include private waters that do not combine with other surface or subsurface water or any water under tribal regulatory jurisdiction pursuant to Section 518 of the Clean Water Act.

"Wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstance do support, a prevalence of vegetation typically adapted for life in saturated soil conditions in New Mexico. Wetlands that are constructed outside of a surface water of the state for the purpose of providing wastewater treatment and that do not impound a surface water of the state are not included in this definition. [*40 CFR §116.3*]

"Playa" means a shallow closed basin lake typically found in the high plains and deserts.

North Carolina

North Carolina has four wetland beneficial uses based on wetland type: freshwater, coastal, swamp waters, and unique wetlands. There is a wetland narrative standard separate from the surface water narrative that mentions six functions to protect and pollutants of concern to wetlands. Wetland narrative includes maintenance of hydrological conditions.



North Carolina has 4,117,865 of mapped NWI wetlands; 265,712 acres of estuarine and marine wetlands, 2,852,153 acres of inland, 2,883,207 acres of forested wetlands that could be swamps.

Beneficial Uses – 15A NCAC 02B.0101

(c) Freshwater shall be assigned to one of the following classification

(8) Class WL: waters that meet the definition of wetlands found in 15A NCAC 2B .0202 except those designated as Class SWL

(d) Tidal Salt Waters shall be assigned to one of the following:

(4) Class SWL: waters that meet the definition of coastal wetlands as defined by 15A NCAC 2H .0205, and which are landward of the mean high water line, and wetlands contiguous to estuarine waters as defined by 15A NCAC 2H .0206

(e) The following are supplemental classifications

(2) Swamp waters (Sw): waters which have low velocities and other natural characteristics which are different from adjacent streams.

(7) Unique wetland (UWL): wetlands of exceptional state or national ecological significance which require special protection to maintain existing uses. These wetlands may include wetlands that have been documented to the satisfaction of the Commission as habitat essential for the conservations of state or federally listed threatened or endangered species.

**Also have a Nutrient Sensitive Waters classification*

Narrative Standard – 15A NCAC 02B .0231 Wetland Standards

(a) General. The water quality standards for all wetlands are designed to protect, preserve, restore and enhance the quality and uses of wetlands and other waters of the state influenced by wetlands. The following are wetland uses:

(1) Storm and flood water storage and retention and the moderation of extreme water level fluctuations;

(2) Hydrologic functions including groundwater discharge that contributes to maintain dry weather streamflow and, at other locations or times, groundwater recharge that replenishes the groundwater system;

(3) Filtration or storage of sediments, nutrients, toxic substances, or other pollutants that would otherwise adversely impact the quality of other waters of the state;

(4) Shoreline protection against erosion through the dissipation of wave energy and water velocity and stabilization of sediments;

(5) Habitat for the propagation of resident wetland-dependent aquatic organisms including, but not limited to fish, crustaceans, mollusks, insects, annelids, planktonic organisms and the plants and animals upon which these aquatic organisms feed and depend upon for their needs in all life stages; and

(6) Habitat for the propagation of resident wetland-dependent wildlife species, including mammals, birds, reptiles and amphibians for breeding, nesting cover, travel corridors and food.

(b) The following standards shall be used to assure the maintenance or enhancement of the existing uses of wetlands identified in Paragraph (a) of this Rule:

(1) Liquids, fill or other solids or dissolved gases may not be present in amounts which may cause adverse impacts on existing wetland uses;

(2) Floating or submerged debris, oil, deleterious substances, or other material may not be present in amounts which may cause adverse impacts on existing wetland uses;

(3) Materials producing color, odor, taste or unsightliness may not be present in amounts which may cause adverse impacts on existing wetland uses;

(4) Concentrations or combinations of substances which are toxic or harmful to human, animal or plant life may not be present in amounts which individually or cumulatively may cause adverse impacts on existing wetland uses;

(5) Hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent adverse impacts on:

(A) Water currents, erosion or sedimentation patterns;

(B) Natural water temperature variations

(C) The chemical, nutrient and dissolved oxygen regime of the wetland;

(D) The movement of aquatic fauna;

(E) The pH of the wetland; and

(F) Water levels or elevations

(6) The populations of wetland flora and fauna shall be maintained to protect the biological integrity as defined at 15A NCAC 2B .0202.

Antidegradation – **sections 404 and 401 permitting mentioned in antidegradation section*

Activities which receive a water quality certification pursuant to these procedures shall not be considered to remove existing uses. The evaluation of permits issued pursuant to G.S. 143-215.1 that involve the assimilation of wastewater or stormwater by wetlands shall incorporate the criteria found

in 15A NCAC 2H .0506(c) (1)-(5) in determining the potential impact of the proposed activity on the existing uses of the wetland per 15A NCAC 2H .0231.

Wetland Definition – 40 CFR § 116.3 (slightly different)

Numeric standards –

Class C water standards (Freshwater) that differ for Swamp waters - 15A NCAC 02B .0211

(6) Dissolved oxygen: not less than 6.0 mg/l for trout waters; for non-trout waters, not less than a daily average of 5.0 mg/l with a minimum instantaneous value of not less than 4.0 mg/l; swamp waters, lake coves, or backwaters, and lake bottom waters may have lower values if caused by natural conditions

(14) pH: shall be normal for the waters in the area, which range between 6.0 and 9.0 except that swamp waters may have a pH as low as 4.3 if it is the result of natural conditions;

Class SC (Salt water) – 15A NCAC 02B .0220

(5) Dissolved oxygen: not less than 5.0 mg/l, except that swamp waters, poorly flushed tidally influenced streams or embayments, or estuarine bottom waters may have lower values if caused by natural conditions;

(12) pH: shall be normal for the waters in the area, which range between 6.8 and 8.5, except that swamp waters may have a pH as low as 4.3 if it is the result of natural conditions;

Standards chapter of the code: Subchapter 2B – Surface Water and Wetland Standards

North Dakota

Wetlands are a class of water bodies in North Dakota, but there are no assigned uses for that class. North Dakota wetlands are subject only to the narrative criteria. There are no numeric criteria for wetlands or lists of classified wetlands (like there are for streams and lakes). Wetlands are mentioned along with lakes and streams in the antidegradation policy.

North Dakota has 2,500,629 acres of wetlands according to NWI.

Beneficial Uses – 33-16-02.1-09 Surface water classifications, mixing zones, and numeric standards.

1. e. Wetlands. These water bodies, including isolated ponds, sloughs, and marshes, are to be considered waters of the state and will be protected under section 33-16-02.1-08. [*Narrative*]

Class I-III streams drinking water, aquatic life, recreation, irrigation; Lakes and reservoirs (class 1-5) fisheries

Narrative Standard – 33-16-02.1-08 General water quality standards

1. Narrative standards.

a. The following minimum conditions are applicable to all waters of the state except for class II ground waters. All waters of the state shall be:

(1) Free from substances attributable to municipal, industrial, or other discharges or agricultural practices that will cause the formation of putrescent or otherwise objectionable sludge deposits.

(2) Free from floating debris, oil, scum, and other floating materials attributable to municipal, industrial, or other discharges or agricultural practices in sufficient amounts to be unsightly or deleterious.

(3) Free from materials attributable to municipal, industrial, or other discharges or agricultural practices producing color, odor, or other conditions to such a degree as to create a nuisance or render any undesirable taste to fish flesh or, in any way, make fish inedible.

(4) Free from substances attributable to municipal, industrial, or other discharges or agricultural practices in concentrations or combinations which are toxic or harmful to humans, animals, plants, or resident aquatic biota. For surface water, this standard will be enforced in part through appropriate whole effluent toxicity requirements in North Dakota pollutant discharge elimination system permits.

(5) Free from oil or grease residue attributable to wastewater, which causes a visible film or sheen upon the waters or any discoloration of the surface of adjoining shoreline or causes a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines or prevents classified uses of such waters.

b. There shall be no materials such as garbage, rubbish, offal, trash, cans, bottles, drums, or any unwanted or discarded material disposed of into the waters of the state.

c. There shall be no disposal of livestock or domestic animals in waters of the state.

d. The department shall propose and submit to the state engineer the minimum streamflows of major rivers in the state necessary to protect the public health and welfare. The department's determination shall address the present and prospective future use of the rivers for public water supplies, propagation of fish and aquatic life and wildlife, recreational purposes, and agricultural, industrial, and other legitimate uses.

e. No discharge of pollutants, which alone or in combination with other substances, shall:

(1) Cause a public health hazard or injury to environmental resources;

(2) Impair existing reasonable beneficial uses of the receiving waters; or

(3) Directly or indirectly cause concentrations of pollutants to exceed applicable standards of the receiving waters.

2. Narrative biological goal.

a. Goal. The biological condition of surface waters shall be similar to that of sites or water bodies determined by the department to be regional reference sites.

c. Implementation. The intent of the state in adopting a narrative biological goal is solely to provide an additional assessment method that can be used to identify impaired surface waters. Regulatory or enforcement actions based solely on a narrative biological goal, such as the development and enforcement of North Dakota pollutant discharge elimination system permit limits, are not authorized. However, adequate and representative biological assessment information may be used in combination with other information to assist in determining whether designated uses are attained and to assist in determining whether new or revised chemical-specific permit limitations may be needed. Implementation will be based on the comparison of current biological conditions at a particular site to the biological conditions deemed attainable based on regional reference sites. In implementing a narrative biological goal, biological condition may be expressed through an index composed of multiple metrics or through appropriate statistical procedures.

Antidegradation –

Category 1: Very high level of protection that automatically applies to Class I and Class IA streams and Class I, II, and II lakes, and wetlands that are functioning at their optimal level.

Category 2: Class IV and Class V lakes and particular wetlands after antidegradation review. In addition, Class II and Class II streams or wetlands meeting one of the criteria identified above [*no*

assimilative capacity or no aquatic life and recreation because of stressors that can't be immediately addressed] at the time of the antidegradation review shall be included in Category 2.

Wetland Definition – Wetlands. These water bodies, including isolated ponds, sloughs, and marshes, are to be considered waters of the state and will be protected under section 33-16-02.1-08 [*Narrative Standard*]

Ohio

Ohio's wetland designated use applies to all waters that meet the 40 CFR § 116.3 definition of wetlands. Wetland antidegradation/protection is based on 10 potential functions wetlands might provide. The narrative standard for wetlands is in addition to the surface water narrative standard.

Ohio has 648,705 acres of NWI wetlands.

Beneficial Use – 3745-1-53 Wetland use designation

All surface waters of the state of Ohio which meet the definition of a wetland in rule 3745-1-02 of the Administrative Code are assigned the wetland designated use.

> 3745-1-02 (97) "Wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration that are sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. "Wetlands" includes swamps, marshes, bogs, and similar areas that are delineated in accordance with the 1987 U.S. Army Corps of Engineers delineation manual.

Narrative Standard – 3745-1-51 Wetland narrative criteria

In addition to the criteria listed in rule 3745-1-04 of the Administrative Code [*Narrative Criteria applicable to all waters.*], to every extent practicable and possible as determined by the director, and except as authorized in accordance with rule 3745-1-54 of the Administrative Code, the following narrative criteria shall apply to wetlands.

(A) The hydrology necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent significant adverse impacts on:

(1) Water currents, erosion or sedimentation patterns;

(2) Natural water temperature variations;

(3) Chemical, nutrient and dissolved oxygen regimes of the wetland;

(10) The movement of aquatic fauna;

(11) The pH of the wetland; and

(12) Water levels or elevations, including those resulting from ground water recharge or discharge.

(B)

(2) Water quality necessary to support existing habitats and the populations of wetland flora and fauna shall be protected to prevent significant adverse impacts on:

(a) Food supplies for fish and wildlife;

(b) Reproductive and nursery areas; and

(c) Dispersal corridors, as that term is defined in rule 3745-1-50 of the Administrative Code.

(3) Water quality shall be protected to prevent conditions conducive to the establishment or proliferation of nuisance organisms, as the term is defined in rule 3745-1-50 of the Administrative Code.

(C) Conditions shall not occur that will have a significant adverse impact on the ability of the wetland to be used for wetland-dependent recreational opportunities in or on the water.

3745-1-04 Criteria applicable to all waters

The following general water quality criteria shall apply to all surface waters of the state including mixing zones. To every extent practical and possible as determined by the director, these waters shall be:

(A) Free from suspended solids or other substances that enter the waters as a result of human activity and that will settle to form putrescent or otherwise objectionable sludge deposits, or that will adversely affect aquatic life;

(B) Free from floating debris, oil, scum and other floating materials entering the waters as a result of human activity in amounts sufficient to be unsightly or cause degradation;

(C) Free from materials entering the waters as a result of human activity producing color, odor or other conditions in such a degree as to create a nuisance;

(D) Free from substances entering the waters as a result of human activity in concentrations that are toxic or harmful to human, animal or aquatic life and/or are rapidly lethal in the mixing zone;

(E) Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae;

(F) Free from public health nuisances associated with raw or poorly treated sewage. A public health nuisance shall be deemed to exist when the conditions set forth in paragraph (F) (1) of this rule are demonstrated.

Antidegradation – 3745-1-54 (B) Wetland antidegradation

(1) The wetland designated use shall be maintained and protected such that degradation of surface waters through direct, indirect, or cumulative impacts does not result in the net loss of wetland acreage or functions in accordance with paragraphs (D) and (E) of this rule.

(2)

(a) Each wetland shall be assigned a category by Ohio EPA for the purposes of reviews of projects pursuant to this rule.

(i) A category will be assigned based on the wetland's relative functions and values, sensitivity to disturbance, rarity, and potential to be adequately compensated for by wetland mitigation.

(ii) In assigning a wetland category, the director will consider the results of an appropriate wetland evaluation method(s) acceptable to the director, and other information necessary in order to fully assess the wetland's functions and values.

(b) The functions of a wetland may include, but are not limited to, the following:

(i) Ground water exchange, including the discharge and recharge of ground water;

(ii) Nutrient removal and/or transformation;

(iii) Sediment and/or contaminant retention;

(iv) Water storage;

(v) Sediment stabilization

(vi) Shoreline stabilization;

(vii) Maintenance of biodiversity, as the term is defined in rule 3745 -1-50 of the Administrative Code;

(viii) Recreation;

(ix) Education and research; and

(x) Habitat for threatened or endangered species

(3) The director may consider the regional significance of the function(s) a wetland performs (e.g., wetlands recognized as providing important hydrological functions in watershed management plans) when determining whether degradation of the wetland can be authorized.

The antidegradation rules for all waters define wetlands as general high quality or limited quality waters based on their category. Ohio also has an isolated wetland permit.

Wetland definition – 40 CFR § 116.3

Pennsylvania

Pennsylvania has no wetland-specific beneficial use, but wetlands are included as waters of the state, in the narrative standard, and as potential waters of ecological significance. All unclassified surface waters support aquatic life, recreation, and water supply uses. No guidance for applying Wildlife Water Supply standard for applying standards to wetlands of ecological significance

Pennsylvania has 484,912 acres of wetlands (in green) according to the National Wetland Inventory.

Beneficial Use – §93.4(a) Statewide water uses. Except when otherwise specified in law or regulation, the uses set forth in Table 2 apply to all surface waters.

WWF - Warm Water Fishes—Maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat.

PWS - Potable Water Supply—Used by the public as defined by the Federal Safe Drinking Water Act, 42 U.S.C.A. § 300F after conventional treatment, for drinking, culinary and other domestic purposes, such as inclusion into foods, either directly or indirectly.

IWS - Industrial Water Supply—Use by industry for inclusion into nonfood products, processing and cooling.

LWS - Livestock Water Supply—Use by livestock and poultry for drinking and cleansing

AWS - Wildlife Water Supply—Use for waterfowl habitat and for drinking and cleansing by wildlife.

IRS - Irrigation—Used to supplement precipitation for crop production, maintenance of golf courses and athletic fields and other commercial horticultural activities.

B - *Boating*—Use of the water for power boating, sail boating, canoeing and rowing for recreational purposes when surface water flow or impoundment conditions allow.

F - *Fishing*—Use of the water for the legal taking of fish. For recreation or consumption.

WC - Water Contact Sports—Use of the water for swimming and related activities.

E - Esthetics—Use of the water as an esthetic setting to recreational pursuits.

Special Protection

HQ - *High Quality Waters*

EV - Exceptional Value Waters

Narrative Standard – §93.6 General water quality criteria

(a) Water may not contain substances attributable to point or nonpoint source discharges in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life.

(b) In addition to other substances listed within or addressed by this chapter, specific substances to be controlled include, but are not limited to, floating materials, oil, grease, scum and substances that produce color, tastes, odors, turbidity or settle to form bottom deposits.

Antidegradation – Surface water of exceptional ecological significance includes wetlands identified as exceptional value wetlands under separate wetland policy.

Wetland Definition – 40 CFR §116.3

Definitions – *Surface waters*—Perennial and intermittent streams, rivers, lakes, reservoirs, ponds, wetlands, springs, natural seeps and estuaries, excluding water at facilities approved for wastewater treatment such as wastewater treatment impoundments, cooling water ponds and constructed wetlands used as part of a wastewater treatment process.

Scope (§93.2.) – (a) This chapter sets forth water quality standards for surface waters of this Commonwealth, including wetlands.

Wetland Policy – 25 Pa. Code § 105.17 (relating to wetlands - separate chapter of the code)

Wetlands are a valuable public natural resource. This chapter will be construed broadly to protect this valuable resource.

(1) *Exceptional value wetlands*. This category of wetlands deserves special protection. Exceptional value wetlands are wetlands that exhibit one or more of the following characteristics:

(i) Wetlands which serve as habitat for fauna or flora listed as "threatened" or "endangered" under the Endangered Species Act of 1973 [....], the Wild Resource Conservation Act [...], 30 Pa.C.S. (relating to the Fish and Boat Code) or 34 Pa.C.S. (relating to the Game and Wildlife Code).

(ii) Wetlands that are hydrologically connected to or located within 1/2-mile of wetlands identified under subparagraph (i) and that maintain the habitat of the threatened or endangered species within the wetland identified under subparagraph (i).

(iii) Wetlands that are located in or along the floodplain of the reach of a wild trout stream or waters listed as exceptional value under Chapter 93 (relating to water quality standards) and the floodplain of streams tributary thereto, or wetlands within the corridor of a watercourse or body of water that has been designated as a National wild or scenic river in accordance with the Wild and Scenic Rivers Act of 1968 (...) or designated as wild or scenic under the Pennsylvania Scenic Rivers Act (...).

(iv) Wetlands located along an existing public or private drinking water supply, including both surface water and groundwater sources, that maintain the quality or quantity of the drinking water supply.

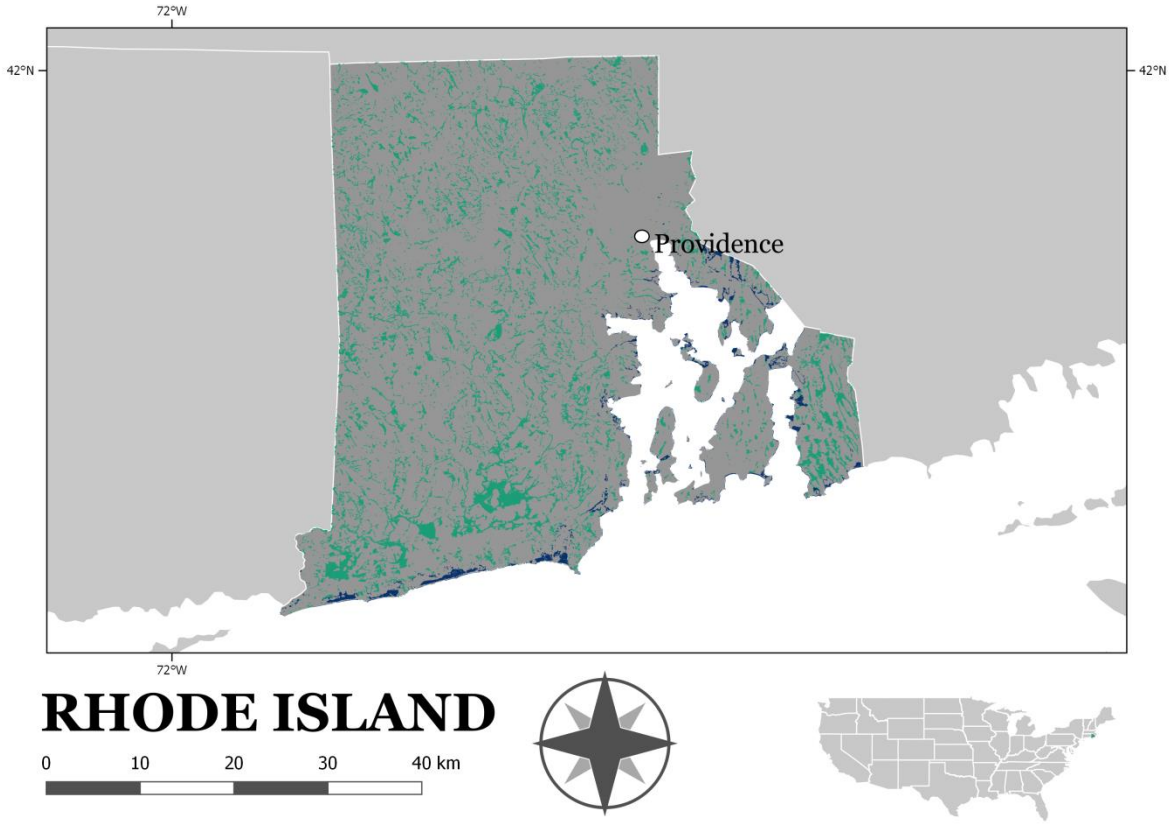
(v) Wetlands located in areas designated by the Department as "natural" or "wild" areas within State forest or park lands, wetlands located in areas designated as Federal wilderness areas under the Wilderness Act (...) or the Federal Eastern Wilderness Act of 1975 (...) or wetlands located in areas designated as National natural landmarks by the Secretary of the Interior under the Historic Sites Act of 1935 (...).

(2) *Other wetlands*. This category includes wetlands not categorized as exceptional value wetlands.

(3) *Permits*. The Department will maintain a list of permit decisions involving wetlands. This list will be a matter of public record and will be available for inspection at the Department's offices.

Rhode Island

Wetlands in Rhode Island have the same designated uses as the waterbodies they are adjacent to (freshwater are class A (excellent) or B (good), seawaters are class SA). There are no exceptions to applying criteria to wetlands. Antidegradation Policy identifies a Unique Fresh Water Wetland category within their Special Resource Protection Waters. Rhode Island has 70,592 acres of wetlands according to the National Wetland Inventory.



Beneficial Use – Water Use Classification

(1). Freshwater:

(b). Class A - These waters are designated for primary and secondary contact recreational activities and for fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have excellent aesthetic value.

(c). Class B* - These waters are designated for fish and wildlife habitat and primary and secondary contact recreational activities. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value.

(2). Seawater: (a). Class SA*@ - These waters are designated for shellfish harvesting for direct human consumption, primary and secondary contact recreational activities, and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation and industrial cooling. These waters shall have good aesthetic value.

C. Water Quality Classifications - All surface waters of the State have been categorized according to the water use classification of rules 8.B.(1), (2), and (3) based on considerations of public health, safety and welfare, recreation, propagation and protection of fish and wildlife, and economic and social benefit.

The surface waters of the State are classified according to the list of water segments in Appendix A. For waterbodies not listed in Appendix A, the following apply:

(3). All freshwaters hydrologically connected by surface waters and upstream of Class B, B1, SB, SB1, C or SC waters shall be Class B unless otherwise identified in Appendix A of these regulations. (4). All other fresh waters, including, but not limited to, ponds, kettleholes and wetlands not listed in Appendix A shall be considered to be Class A.

(5). All seawaters not listed in Appendix A shall be considered to be Class SA. All saltwater and brackish wetlands contiguous to seawaters not listed in Appendix A shall be considered to be Class SA.

(6). All saltwater and brackish wetlands contiguous to seawaters listed in Appendix A shall be considered the same class as their associated seawaters.

Narrative Standard – D. Water Quality

Criteria - The following physical, chemical and biological criteria are parameters of minimum water quality necessary to support the surface water use classifications of rule 8.B. and shall be applicable to all waters of the State.

(1). General Criteria - The following minimum criteria are applicable to all waters of the State, unless criteria specified for individual classes are more stringent:

(a). At a minimum, all waters shall be free of pollutants in concentrations or combinations or from anthropogenic activities subject to these regulations that:

i. Adversely affect the composition of fish and wildlife;

ii. Adversely affect the physical, chemical, or biological integrity of the habitat;

iii. Interfere with the propagation of fish and wildlife;

iv. Adversely alter the life cycle functions, uses, processes and activities of fish and wildlife; or

v. Adversely affect human health.

(b). Aesthetics - all waters shall be free from pollutants in concentrations or combinations that:

i. Settle to form deposits that are unsightly, putrescent, or odorous to such a degree as to create a nuisance, or interfere with the existing or designated uses;

ii. Float as debris, oil, grease, scum or other floating material attributable to wastes in amounts to such a degree as to create a nuisance or interfere with the existing or designated uses;

iii. Produce odor or taste or change the color or physical, chemical or biological conditions to such a degree as to create a nuisance or interfere with the existing or designated uses; or,

iv. Result in the dominance of species of fish and wildlife to such a degree as to create a nuisance or interfere with the existing or designated uses. July 2006, amended December 2010 13

(c). Radioactive substances - The level of radioactive materials in all waters shall not be in concentrations or combinations which will likely be harmful to humans, fish and wildlife, or result in concentrations in organisms producing undesirable conditions.

(d). Nutrients - Nutrients shall not exceed the limitations specified in rule 8.D. (2) and 8.D. (3) and/or more stringent site-specific limits necessary to prevent or minimize accelerated or cultural eutrophication.

Antidegradation – Unique Fresh Water Wetland category in SRPW (Special Resource Protection Waters)

"Special Resource Protection Waters (SRPW)" means surface waters identified by the Director as having significant recreational or ecological uses, and may include but are not limited to: wildlife refuge or management areas; public drinking water supplies; State and Federal parks; State and Federal designated Estuarine Sanctuary Areas; waterbodies containing critical habitats, including but

not limited to waterbodies identified by the RIDEM Natural Heritage Program as critical habitat for rare or endangered species; wetland types or specific wetlands listed as rare, threatened, endangered, of special interest or of special concern by the Rhode Island Natural Heritage Program; waterbodies identified by the U. S. Department of the Interior on the Final List of Rivers for potential inclusion in the National Wild and Scenic Rivers System.

Wetland Definition – 40 CFR 116.3 + rules for other wetlands

[...] Freshwater wetlands are determined by the Department in accordance with the Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, as amended. Coastal wetlands are determined by rules and regulations under the jurisdiction of the Coastal Resources Management Council.

Definitions –

"Undesirable or Nuisance Species" means any plant or animal aquatic species which becomes so numerous due to pollutants or physical or hydrological modifications that it interferes with, or indicates an impairment of, the designated use(s) of a waterbody.

South Dakota

Wetlands are protected as waters of the state of South Dakota, but have not been assigned uses or criteria. All surface waters with water present for a sufficient duration support fish and wildlife propagation, recreation, and stock waters. Protection of wetlands is part of the narrative standard.

South Dakota has 2,140,022 acres of wetlands (in green) according to the National Wetland Inventory.

Beneficial Uses – *no assigned use tables*

"Fish and wildlife propagation, recreation, and stock watering," a beneficial use classification assigned to all surface waters of the state that may support recreation in and on the water and fish and aquatic life, when sufficient quantities of water are present for sufficient duration to support those uses; that provide habitat for aquatic and semiaquatic wild animals and fowl; that provide natural food chain maintenance; and that are of suitable quality for watering domestic and wild animals;

Narrative Standard – 74:51:01:06 - 14

74:51:01:06. Visible pollutants prohibited. Raw or treated sewage, garbage, rubble, unpermitted fill materials, municipal wastes, industrial wastes, or agricultural wastes which produce floating solids, scum, oil slicks, material discoloration, visible gassing, sludge deposits, sediments, slimes, algal blooms, fungus growths, or other offensive effects may not be discharged or caused to be discharged into surface waters of the state.

74:51:01:07. Acids and alkalis. No materials may be discharged or caused to be discharged which affect the pH of the receiving waters by more than 0.5 pH unit. This does not apply to pH fluctuations of more than 0.5 pH unit contributable to natural influences.

74:51:01:08. Taste- and odor-producing materials. Materials which will impart undesirable tastes or undesirable odors to the receiving water may not be discharged or caused to be discharged into surface waters of the state in concentrations that impair a beneficial use.

74:51:01:09. Nuisance aquatic life. Materials which produce nuisance aquatic life may not be discharged or caused to be discharged into surface waters of the state in concentrations that impair an existing or designated beneficial use or create a human health problem.

74:51:01:10. Petroleum products. A discharge of insoluble materials of petroleum derivation that imparts a visible film or sheen to the surface of the water or the adjoining shorelines is prohibited.

74:51:01:11. Protection of wetlands as waters of the state. Wetlands are waters of the state and are allowed protection under the provisions of this chapter. The discharge of pollutants from any source, including indiscriminate use of fill material, may not cause destruction or impairment of wetlands except where authorized under § 402 or § 404 of the Federal Water Pollution Control Act as amended to February 4, 1987, or under 40 C.F.R. Parts 257 and 258, Solid Waste Disposal Facility Criteria; Final Rule, as amended to July 1, 1996. The provisions of §§ 74:51:01:06 to 74:51:01:10, inclusive, 74:51:01:12, 74:51:01:34 to 74:51:01:39, inclusive, 74:51:01:52, and 74:51:01:63 to 74:51:01:65, inclusive, apply to all wetlands. In addition, the department shall evaluate wetlands to determine the applicability of such wetlands to the toxic pollutant standards provided in § 74:51:01:55 and Appendix B at the end of this chapter.

74:51:01:12. Biological integrity of waters. All waters of the state must be free from substances, whether attributable to human-induced point source discharges or nonpoint source activities, in concentrations or combinations which will adversely impact the structure and function of indigenous or intentionally introduced aquatic communities.

74:51:01:13. Total dissolved gas pressure. In waters protected as coldwater fisheries, discharges from impoundments or other sources may not cause the total dissolved gas pressure to exceed 110 percent of the saturation value.

74:51:01:14. Radioactive iodine, radium, strontium, and tritium concentrations established. The average dissolved concentrations including the naturally occurring or background concentrations of iodine-131, radium-226, strontium-89, strontium-90, and tritium may not exceed the following concentration limits: iodine-131, 5 pCi/L; radium-226, 5 pCi/L; strontium-89, 100 pCi/L; strontium-90, 10 pCi/L; and tritium, 300 pCi/L

Antidegradation – no wetland specific language

Wetland Definition – 40 CFR §116.3

Definitions – (44) "Surface water of the state," lakes, ponds, streams, rivers, wetlands, and any other body or accumulation of water on the land surface that is considered to be waters of the state, but not waste treatment systems, including treatment ponds, lagoons, leachate collection ponds, or stormwater retention ponds designed to meet the requirements of the CWA;

Utah

Utah's definition of waters of the state that includes ponds and marshes. The 5E beneficial use class encompasses some Great Salt Lake-adjacent wetlands and includes the waterfowl and shorebird use as well as recreation. Site-specific recreation and aquatic life uses apply to wetlands within federal refuges and state waterfowl management areas. There is a single narrative standard for all surface waters. The majority of Utah's wetlands are located around Great Salt Lake. Five potential or existing water quality classes apply to Utah wetlands: 5E Transitional Great Salt Lake wetlands, Willard Spur, Bear River Migratory Bird Refuge, State waterfowl management areas, and all other wetlands not included in those categories.

National Wetland Inventory:
1,088,181 total acres
Freshwater Emergent - 299,217 acres
Forested/Shrub - 47,704 acres
Ponds - 29,413 acres
Lakes - 669,827 acres
Other - 42,007 acres

Beneficial Uses – Use Designations R317-2-6.

1.2 Class 2 – Protected for recreational use and aesthetics.

b. Class 2B – Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting and fishing.

1.3 Class 3 – Protected for use by aquatic wildlife.

a. Class 3A – Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.

b. Class 3B – Protected for warm water species of game fish and other warm water aquatic life, including the necessary aquatic organisms in their food chain.

c. Class 3C – Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.

d. Class 3D – Protected for waterfowl, shore birds and other water-oriented wildlife not included in Classes 3A (cold-water fishes), 3B (warm-water fishes), or 3C (nongame fish), including the necessary aquatic organisms in their food chain.

6.5 Class 5 – The Great Salt Lake

e. Class 5E Transitional Waters along the Shoreline of the Great Salt Lake

Geographical Boundary – All waters below approximately 4,208-foot elevation to the current lake elevation of the open water of the Great Salt Lake receiving their source water from naturally occurring springs and streams, impounded wetlands, or facilities requiring a UPDES permit. The geographical areas of these transitional waters change corresponding to the fluctuation of open water elevation.

Beneficial Uses – Protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

Narrative Standard – R317-2-7.2

It shall be unlawful, and a violation of these rules, for any person to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum or other nuisances such as color, odor or taste; or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by bioassay or other tests performed in accordance with standard procedures; or determined by biological assessments in Subsection R317-2-7.3.

According to NWI, Utah has 820,521 acres of wetlands.

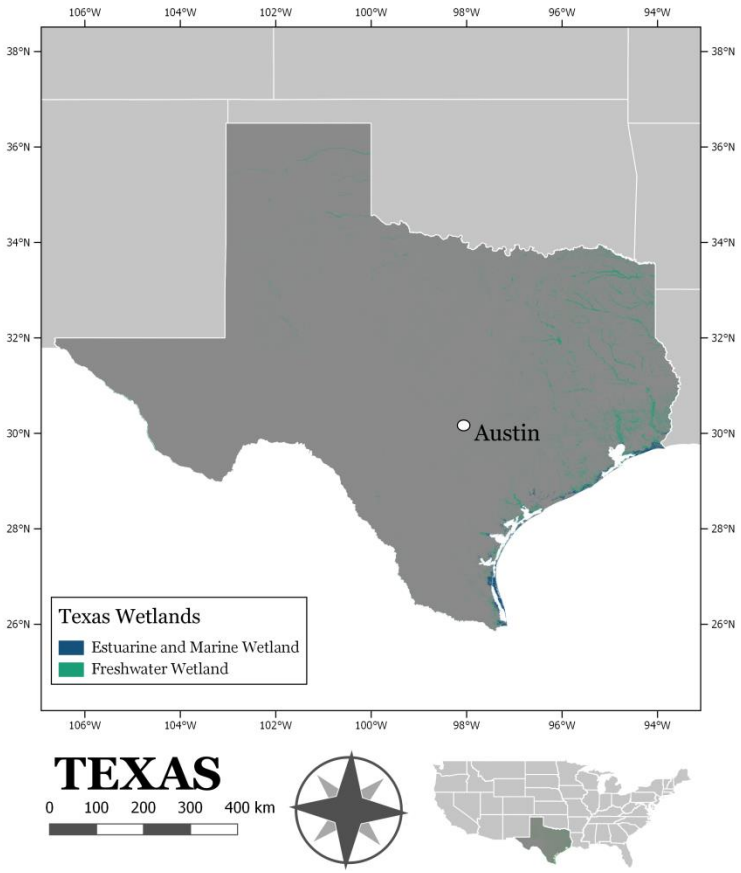
Antidegradation – no wetland-specific or relevant language

Wetland definition – none

Definitions – "Waters of the state" means all streams, lakes, ponds, marshes, water-courses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion thereof, except that bodies of water confined to and retained within the limits of private property, and which do not develop into or constitute a nuisance, or a public health hazard, or a menace to fish and wildlife, shall not be considered to be "waters of the state" under this definition (Section 19-5-102).

Texas

Wetlands are included in waters of the state of Texas. Water quality statute includes definitions of wetlands and wetland water quality functions. Nontidal wetlands support the primary contact recreation use. Narrative criteria includes physical habitat changes under §404.



Texas has 4,720,221 acres of wetlands according to the National Wetland Inventory.

Beneficial use – §307.4(j)(2)(A)

(A) Primary contact recreation 1. Primary contact recreation 1 is presumed for lakes, reservoirs, and tidal water bodies. Primary contact recreation 1 is presumed to apply to intermittent streams, intermittent streams with perennial pools, nontidal wetlands, and perennial freshwater streams and rivers, except where site-specific information indicates that recreational activities that involve a significant risk of ingestion have little to no likelihood of occurring, in accordance with subparagraph (C) of this paragraph.

Narrative Standard – §307.4 General Criteria

(b) Aesthetic parameters

(1) Concentrations of taste and odor producing substances must not interfere with the production of potable water by reasonable water treatment methods, impart unpalatable flavor to food fish including shellfish, result in offensive odors arising from the waters, or otherwise interfere with the reasonable use of the water in the state.

(2) Surface water must be essentially free of floating debris and suspended solids that are conducive to producing adverse responses in aquatic organisms or putrescible sludge deposits or sediment layers that adversely affect benthic biota or any lawful uses.

(3) Surface waters must be essentially free of settleable solids conducive to changes in flow characteristics of stream channels or the untimely filling of surface water in the state. This provision does not prohibit dredge and fill activities that are permitted in accordance with the Federal Clean Water Act.

(4) Surface waters must be maintained in an aesthetically attractive condition.

(5) Waste discharges must not cause substantial and persistent changes from ambient conditions of turbidity or color.

(6) No foaming or frothing of a persistent nature is permissible.

(7) Surface waters must be maintained so that oil, grease, or related residue do not produce a visible film or sheen of oil or globules of grease on the surface or coat the banks or bottoms of the watercourse; or cause toxicity to man, aquatic life, or terrestrial life in accordance with subsection (d) of this section.

(c) Radiological substances. Radioactive materials must not be discharged in excess of the amount regulated by Chapter 336 of this title (relating to Radioactive Substance Rules).

(d) Toxic substances. Surface waters must not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life. Additional requirements and criteria for toxic substances are specified in §307.6 of this title (relating to Toxic Materials). Criteria to protect aquatic life from acute toxicity apply to all surface waters in the state except as specified in §307.8(a)(3) of this title. Criteria to protect aquatic life from chronic toxicity apply to surface waters with an aquatic life use of limited, intermediate, high, or exceptional as designated in §307.10 of this title (relating to Appendices A - G) or as determined on a case-by-case basis in accordance with subsection (l) of this section. Toxic criteria to protect human health for consumption of fish apply to waters with a sustainable or incidental fishery, as described in §307.6(d) of this title. Additional criteria apply to water in the state with a public drinking water supply use, as described in §307.6(d) of this title. The general provisions of this subsection do not change specific provisions in §307.8 of this title for applying toxic criteria.

(e) Nutrients. Nutrients from permitted discharges or other controllable sources must not cause excessive growth of aquatic vegetation that impairs an existing, designated, presumed, or attainable use. Site-specific nutrient criteria, nutrient permit limitations, or separate rules to control nutrients in individual watersheds are established where appropriate after notice and opportunity for public participation and proper hearing. Site-specific numeric criteria related to chlorophyll *a* are listed in Appendix F of §307.10 of this title.

(f) Temperature. Consistent with §307.1 of this title (relating to General Policy Statement) and in accordance with state water rights permits, temperature in industrial cooling impoundments, industrial cooling water areas, and all other surface water in the state must be maintained so as to not interfere with the reasonable use of such waters. Numerical temperature criteria have not been specifically established for industrial cooling impoundments, which in most areas of the state contribute to water conservation and water quality objectives. In addition, numerical criteria for temperature are not applicable in designated industrial cooling water areas, as defined in §307.3 of this title (relating to Definitions and Abbreviations). The horizontal boundaries of an industrial cooling water area must be defined in the applicable wastewater permit. The following temperature criteria, expressed as a maximum temperature differential (rise over ambient) are established except for industrial cooling impoundments, temperature elevations due to discharges of treated domestic (sanitary) effluent, and temperature elevations within designated mixing zones or industrial cooling water areas. [...]

(g) Salinity.

(1) Concentrations and the relative ratios of dissolved minerals such as chloride, sulfate, and total dissolved solids must be maintained such that existing, designated, presumed, and attainable uses are not impaired.

(2) Criteria for chloride, sulfate, and total dissolved solids for classified freshwater segments are specified in Appendix A of §307.10 of this title.

(3) Salinity gradients in estuaries must be maintained to support attainable estuarine dependent aquatic life uses. Numerical salinity criteria for Texas estuaries have not been established because of the high natural variability of salinity in estuarine systems, and because long-term studies by state agencies to assess estuarine salinities are still ongoing. Absence of numerical criteria must not preclude evaluations and regulatory actions based on estuarine salinity, and careful consideration must be given to all activities that may detrimentally affect salinity gradients.

(h) Aquatic life uses and dissolved oxygen.

(1) Dissolved oxygen concentrations must be sufficient to support existing, designated, presumed, and attainable aquatic life uses. Aquatic-life use categories and corresponding dissolved oxygen criteria are described in §307.7(b)(3) of this title (relating to Site-Specific Uses and Criteria).

(2) Aquatic life use categories and dissolved oxygen criteria for classified segments are specified in Appendix A of §307.10 of this title. Aquatic life use categories and dissolved oxygen criteria for other specific water bodies are specified in Appendix D of §307.10 of this title. Where justified by sufficient site-specific information, dissolved oxygen criteria that differ from §307.7(b)(3) of this title may be adopted for a particular water body in §307.10 of this title.

(3) Perennial streams, rivers, lakes, bays, estuaries, and other appropriate perennial waters that are not specifically listed in Appendix A or D of §307.10 of this title are presumed to have a high aquatic life use and corresponding dissolved oxygen criteria. Applicable dissolved oxygen criteria are described in §307.7(b)(3)(A) of this title. Higher uses are protected where they are attainable.

(4) When water is present in the streambed of intermittent streams, a 24-hour dissolved oxygen mean of at least 2.0 mg/L and 24-hour minimum dissolved oxygen concentration of 1.5 mg/L must be maintained. Intermittent streams that are not specifically listed in Appendix A or D of §307.10 of this title are considered to have a minimal aquatic life use except as indicated below in this subsection. For intermittent streams with seasonal aquatic life uses, dissolved oxygen concentrations commensurate with the aquatic life uses must be maintained during the seasons when the aquatic life uses occur. Unclassified intermittent streams with perennial pools are presumed to have a limited aquatic life use and corresponding dissolved oxygen criteria. Higher uses are protected where they are attainable.

(i) Aquatic life uses and habitat. Vegetative and physical components of the aquatic environment must be maintained or mitigated to protect aquatic life uses. Procedures to protect habitat in permits for dredge and fill are specified in Federal Clean Water Act, §404 and in Chapter 279 of this title (relating to Water Quality Certification).

Antidegradation – no wetland-specific rules

Wetland Definition – Wetland--An area (including a swamp, marsh, bog, prairie pothole, or similar area) having a predominance of hydric soils that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and that under normal circumstances supports the growth and regeneration of hydrophytic vegetation. The term "hydric soil" means soil that, in its undrained condition, is saturated, flooded, or ponded long enough during a growing season to develop an anaerobic condition that supports the growth and regeneration of hydrophytic vegetation. The term "hydrophytic vegetation" means a plant growing in: water or a substrate that is at least periodically deficient in oxygen during a growing season as a result of excessive water content. The term "wetland" does not include irrigated acreage used as farmland; a man-made wetland of less than one acre; or a man-made wetland where construction or creation commenced on or after August 28, 1989, and that was not constructed with wetland creation as a stated objective, including but not limited to an impoundment made for the purpose of soil and water conservation that has been approved or requested by soil and water conservation districts. If this definition of wetland conflicts with the federal definition in any manner, the federal definition prevails.

Definitions – Surface water in the state--Lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state as defined in the Texas Water Code, §26.001, and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or nonnavigable, and including the beds and banks of all water-courses and bodies of surface water, that are wholly or partially inside or

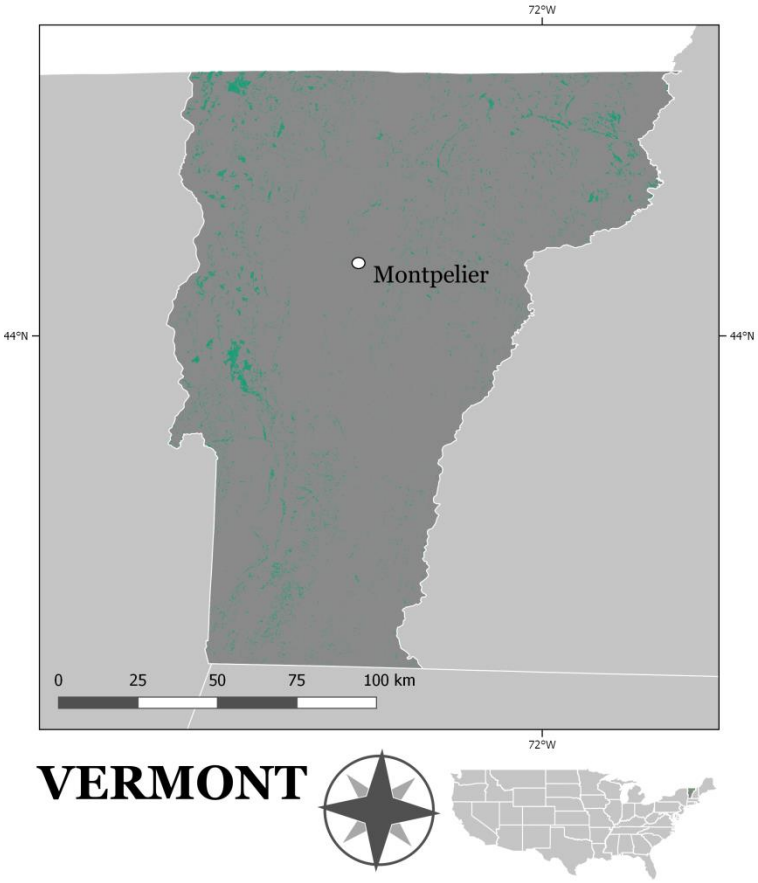
bordering the state or subject to the jurisdiction of the state; except that waters in treatment systems that are authorized by state or federal law, regulation, or permit, and that are created for the purpose of waste treatment are not considered to be water in the state.

Wetland water quality functions--Attributes of wetlands that protect and maintain the quality of water in the state, which include stormwater storage and retention and the moderation of extreme water level fluctuations; shoreline protection against erosion through the dissipation of wave energy and water velocity, and anchoring of sediments; habitat for aquatic life; and removal, transformation, and retention of nutrients and toxic substances.

Applicability – (§307.2.b) The Texas Surface Water Quality Standards apply to surface waters in the state - including wetlands.

Vermont

Most wetlands in Vermont support warm-water fish habitat, a small number are classified as cold water fish habitat. There is no guidance for applying criteria to wetland waters in the statute. Hydrologic criteria section covers streamflow protection, flow studies, water level fluctuations, and high flow regimes.



Vermont has 301,667 acres of wetlands (in green) according to the National Wetland Inventory.

Beneficial Use – Appendix A - Fish Habitat Designation

A. Warm Water Fish Habitat All wetlands, except those designated as cold water fish habitat in paragraph B below, and the following waters are designated as warm water fish habitat for purposes of these rules:

B. Cold Water Fish Habitat

1. All waters not designated as warm water fish habitat by subsection A are hereby designated as cold water fish habitat for purposes of these rules.

2. The following wetlands are designated as cold water fish habitat:

Narrative Standard – Section 3-01-B General Criteria

The following water quality criteria shall be achieved in all waters, regardless of their classification:

1. Temperature

a. General - The change or rate of change in temperature, either upward or downward, shall be controlled to ensure full support of aquatic biota, wildlife, and aquatic habitat uses. For the purpose of applying this criterion, ambient temperature shall mean the water temperature

measured at a control point determined by the Secretary to be outside the influence of a discharge or activity.

b. Cold Water Fish Habitat - The total increase from the ambient temperature due to all discharges and activities shall not exceed 1.00F except as provided for in paragraph (d) below.

c. Warm Water Fish Habitat - The total increase from the ambient temperature due to all discharges and activities shall not exceed the temperature criteria derived from tables 1 or 2 except as provided for in paragraph (d) below: [...]

2. Phosphorus - a. All waters - general policy In all waters, total phosphorous loadings shall be limited so that they will not contribute to the acceleration of eutrophication or the stimulation of the growth of aquatic biota in a manner that prevents the full support of uses.

3. Nitrates- a. General Policy In all waters nitrates shall be limited so that they will not contribute to the acceleration of eutrophication, or the stimulation of the growth of aquatic biota, in a manner that prevents the full support of uses.

4. Sludge deposits or solid refuse - None

5. Settleable solids, floating solids, oil, grease, scum, or total suspended solids - None in such concentrations or combinations that would prevent the full support of uses.

6. Taste and Odor - None that would prevent the full support of any designated uses or existing use or have an adverse effect on the taste or odor of fish.

7. Color - None that would prevent the full support of uses.

8. Alkalinity - No change from reference conditions that would prevent the full support of the aquatic biota, wildlife, and aquatic habitat uses.

9. pH - pH values shall be maintained within the range of 6.5 and 8.5. Both the change and the rate of change in pH values shall be controlled to ensure the full support of the aquatic biota, wildlife, and aquatic habitat uses.

10. Toxic substances - a. General Where necessary to fully support uses an existing or designated use, waters shall be managed to prevent the discharge of toxic substances in concentrations, quantities or combinations that exceed:

(1) For toxic substances that are carcinogenic, a maximum individual lifetime risk to human health greater than 10-6 ;

(2) For toxic substances that are noncarcinogenic, a maximum individual life time risk of no adverse effect to human health; or

(3) Acute or chronic toxicity to aquatic biota or wildlife. [...]

11. Radioactive Substances - Waters shall be managed so as to prevent the discharge of radioactive substances in concentrations, quantities or combinations that may create a significant likelihood of an adverse impact on human health or a risk of acute or chronic toxicity of aquatic biota or wildlife. Unless otherwise required by these rules, the Secretary shall determine limits for discharges containing radioactive substances based on the results of biological toxicity assessments and the appropriate available scientific data, including but not limited to:

a. The Vermont State Health Regulation, Part 5, Chapter 3 “Radiological Health,” effective as of 12/10/77

b. 10 CFR 50, Appendix l

The discharge of radioactive substances shall not exceed the lowest limits which are reasonably achievable.

Antidegradation – no wetland language

Wetland Definition – none

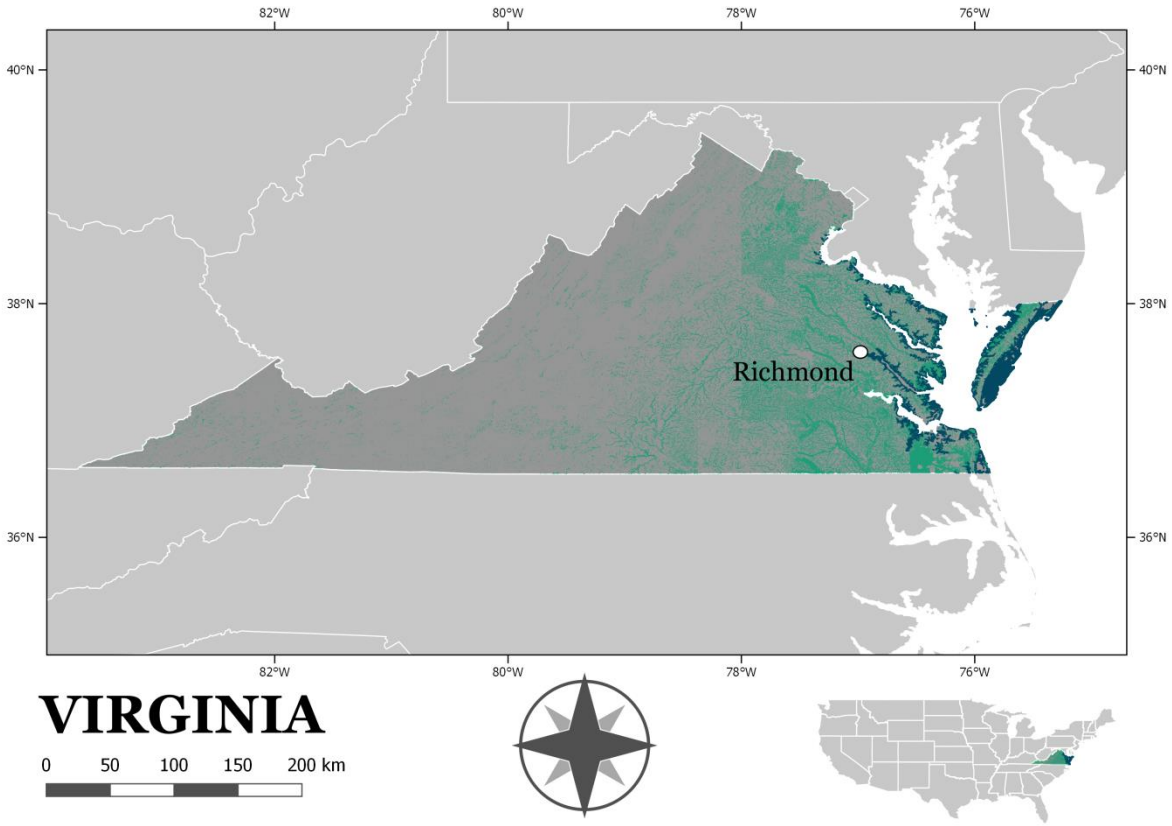
Definitions – Waters include all rivers, streams, creeks, brooks, reservoirs, ponds, lakes, springs and all bodies of surface waters, artificial or natural, which are contained within, flow through or border upon the State or any portion of it.

Hydrologic Criteria (3-01-C) – In order to effectively implement the water conservation and hydrology policies set forth in Section 1-02(E) of these rules, and to ensure full support of uses, the following hydrology criteria shall be achieved and maintained where applicable. Where there are multiple activities that affect flow in a basin, a determination of compliance with the following criteria shall include consideration of the cumulative effects of these activities.

1. Streamflow Protection
2. Flow Study Requirements
3. Water Level Fluctuations
4. High Flow Regime

Virginia

Wetlands are included as waters of the state of Virginia and support the default beneficial uses of recreation, aquatic life, and wildlife. An aquatic life sub-category – shallow-water submerged aquatic vegetation – is a seasonal use specific to Chesapeake Bay. The Chesapeake Bay is a class of waters with several subcategories based on depth. Numeric criteria tables have exclusions for applying traditional criteria to swamp waters.



Virginia has 1,602,765 acres of NWI wetlands

Beneficial Use – 9VAC25-260-10. Designation of uses.

A. All state waters, including wetlands, are designated for the following uses: recreational uses, e.g., swimming and boating; the propagation and growth of a balanced, indigenous population of aquatic life, including game fish, which might reasonably be expected to inhabit them; wildlife; and the production of edible and marketable natural resources, e.g., fish and shellfish.

B. Subcategories of the propagation and growth of a balanced indigenous population of aquatic life, including game fish designated use for waters in the Chesapeake Bay and its tidal tributaries are listed in this subsection.

2. Shallow-water Submerged Aquatic Vegetation Designated Use: waters in the Chesapeake Bay and its tidal tributaries that support the survival, growth and propagation of submerged aquatic vegetation (rooted, underwater bay grasses). This use applies April 1 through October 31 in tidal-fresh, oligohaline and mesohaline Chesapeake Bay Program segments, and March 1 through November 30 in polyhaline Chesapeake Bay Program segments and applies in addition to the open-water use described in this subsection.

C. In designating uses of a water body and the appropriate criteria for those uses, the board shall take into consideration the water quality standards of downstream waters and shall ensure that its water

quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.

D. The board may adopt subcategories of a use and set the appropriate criteria to reflect varying needs of such subcategories of uses, for instance, to differentiate between cold water (trout streams) and warm water fisheries.

Narrative Standard – 9VAC25-260-20. General criteria.

A. State waters, including wetlands, shall be free from substances attributable to sewage, industrial waste, or other waste in concentrations, amounts, or combinations which contravene established standards or interfere directly or indirectly with designated uses of such water or which are inimical or harmful to human, animal, plant, or aquatic life.

Specific substances to be controlled include, but are not limited to: floating debris, oil, scum, and other floating materials; toxic substances (including those which bioaccumulate); substances that produce color, tastes, turbidity, odors, or settle to form sludge deposits; and substances which nourish undesirable or nuisance aquatic plant life. Effluents which tend to raise the temperature of the receiving water will also be controlled. Conditions within mixing zones established according to 9VAC25-260-20 B do not violate the provisions of this subsection.

Antidegradation – nothing addressing wetlands or waters in parks or refuges

Wetland Definition – 40 CFR §116.3

Wetland-specific numeric criteria – 9VAC25-260-50. Numerical criteria for dissolved oxygen, pH, and maximum temperature.

Swamp waters have no dissolved oxygen numeric criteria, no temperature, acidic and wide (3.7-8.0) pH range. Mostly Great Dismal Swamp with some other named swamps

Ammonia standard based on pH and whether trout are present

Chesapeake Bay-specific criteria – 9VAC25-260-185. Criteria to protect designated uses from the impacts of nutrients and suspended sediment in the Chesapeake Bay and its tidal tributaries.

No dissolved oxygen criteria or chlorophyll-a criteria

Water clarity criteria for Bay segments: percent light-through-water, water clarity acres, temporal application

Mixing zones – 4. Mixing zones shall not be allowed by the board for effluents discharged to wetlands, swamps, marshes, lakes or ponds.

Definitions – "Swamp waters" means waters with naturally occurring low pH and low dissolved oxygen caused by (i) low flow velocity that prevents mixing and reaeration of stagnant, shallow waters and (ii) decomposition of vegetation that lowers dissolved oxygen concentrations and causes tannic acids to color the water and lower the pH.

Washington

Surface waters of Washington State explicitly include wetlands, but they state the primary means of protecting wetland water quality is through antidegradation procedures. Unique wetland types and wetlands within refuges qualify for Tier III (highest) protections. Unless otherwise listed, all waters have designated uses of aquatic life, recreation, water supply, and miscellaneous uses. There is one narrative standard for all freshwater uses. Wetlands may have additional beneficial uses including groundwater exchange, shoreline stabilization, and storm water attenuation. Washington administrative code has a section on establishing nutrient criteria for lakes based on ecoregion and ambient total phosphorus.

Washington has 950,218 acre of NWI wetlands.

Beneficial Uses – Part II – Designated Uses and Criteria

WAC 1730-201A-600 Use designations – Fresh waters.

> (1) All surface waters of the state not named in Table 602 are to be protected for the designated uses of: Salmonid spawning, rearing, and migration; primary contact recreation, domestic, industrial, and agricultural supply; stock waters; wildlife habitat; harvesting; commerce and navigation; boating; and aesthetic values.

WAC 173-201A-260 Natural conditions and other water quality criteria and applications

> (3)(i)(i) In addition to *designated uses*, wetlands may have *existing beneficial uses* that are to be protected that include ground water exchange, shoreline stabilization, and stormwater attenuation.

Narrative Standard – WAC 173-201A-260 Natural conditions and other water quality criteria and applications

(2) Toxics and aesthetics criteria. The following narrative criteria apply to all existing and designated uses for freshwater and marine water:

(a) Toxic, radioactive, or deleterious material concentrations must be below those which have the potential, either singularly or cumulatively, to adversely affect characteristic water uses, cause acute or chronic conditions to the most sensitive biota dependent upon those waters, or adversely affect public health.

(b) Aesthetic values must not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste.

Antidegradation – 173-201A-310 *addresses 'natural water quality' and waters in parks and refuges*

Tier 1 – Protection and maintenance of existing and designated uses (3) Whenever the natural conditions of a water body are of a lower quality than the assigned criteria, the natural conditions constitute the water quality criteria. Where water quality criteria are not met because of natural conditions, human actions are not allowed to further lower the water quality, except where explicitly allowed in this chapter.

Tier II – Protection of waters of higher quality than the standards

Tier III – Protection of outstanding resource waters. Where a high quality water is designated as an outstanding resource water, the water quality and uses of those waters must be maintained and protected. As part of the public process, a qualifying water body may be designated as Tier III (A) which prohibits any and all future degradation, or Tier III (B) which allows for de minimis degradation from well-controlled activities.

(1) To be eligible for designation as an outstanding resource water in Washington, one or more of the following must apply:

(a) The water is in relatively pristine condition (largely absent human sources of degradation) or possesses exceptional water quality, and also occurs in federal and state parks, monuments, preserves, wildlife refuges, wilderness areas, marine sanctuaries, estuarine research reserves, or wild and scenic rivers;

(b) The water has unique aquatic habitat types (for example, peat bogs) that by conventional water quality parameters (such as dissolved oxygen, temperature, or sediment) are not considered high quality, but that are unique and regionally rare examples of their kind.

Wetland Definition – 40 CFR §116.3

Definitions –

Surface waters of the state include lakes, rivers, ponds, streams, inland waters, saltwaters, wetlands, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Define bog, created wetlands, wetlands (doesn't include wetlands created intentionally from uplands)

Natural water quality conditions –

173-201A-260 Natural conditions and other water quality criteria and applications

(3) Procedures for applying water quality criteria

(i) The primary means for protecting water quality in wetlands is through implementing the antidegradation procedures described in Part III of this chapter

(i) In addition to designated uses, wetlands may have existing beneficial uses that are to be protected that include ground water exchange, shoreline stabilization, and stormwater attenuation.

(ii) Water quality in wetlands is maintained and protected by maintaining the hydrologic conditions, hydrophytic vegetation, and substrate characteristics necessary to support existing and designated uses.

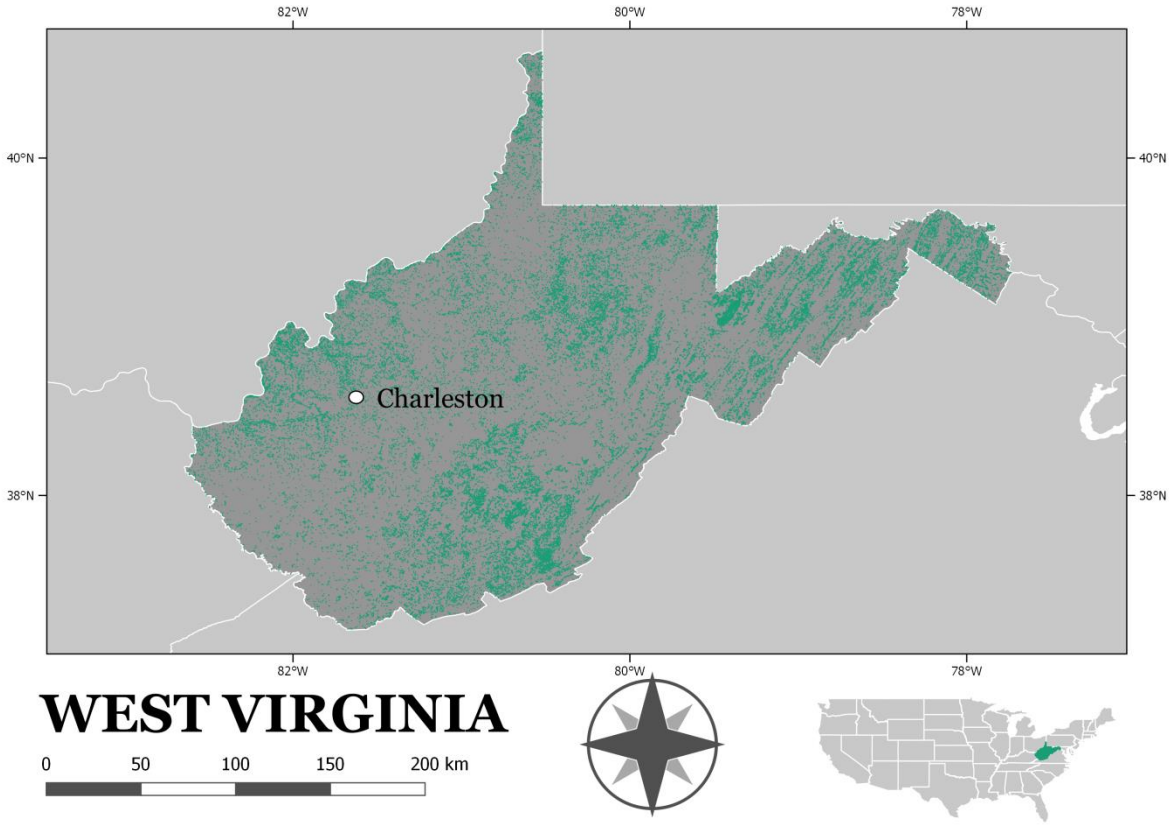
(iii) Wetlands must be delineated using the Washington State Wetlands Identification and Delineation Manual in accordance with WAC 173-22-035

Exceptions to numeric standards –

Turbidity: For projects working within or along lakes, ponds, wetlands, or other nonflowing waters, the point of compliance shall be at a radius of one hundred fifty feet from the activity causing the turbidity exceedance.

West Virginia

Two beneficial uses, aquatic life and wildlife, apply to West Virginia wetlands. Wetland classification states numeric criteria may not be appropriate, criteria tables identify pH, dissolved oxygen, temperature, and iron criteria as inappropriate for wetlands, especially those with high pH.



West Virginia has 60,529 acres of NWI wetlands.

Beneficial Uses – §47-2-6. Water Use Categories

6.3. Category B -- Propagation and maintenance of fish and other aquatic life. -- This category includes:

6.3.c. Category B4 -- Wetlands. -- As defined in section 2.22, herein; certain numeric stream criteria may not be appropriate for application to wetlands (see Appendix E, Table 1).

6.5. Category D. -- Agriculture and wildlife uses.

6.5.c. Category D3 -- Wildlife. -- This category includes all stream segments and wetlands used by wildlife.

Narrative Standard – §47-2-3. Conditions Not Allowable In State Waters.

3.1. Certain characteristics of sewage, industrial wastes and other wastes cause pollution and are objectionable in all waters of the state. Therefore, the Secretary does hereby proclaim that the following general conditions are not to be allowed in any of the waters of the state.

3.2. No sewage, industrial wastes or other wastes present in any of the waters of the state shall cause therein or materially contribute to any of the following conditions thereof:

3.2.a. Distinctly visible floating or settleable solids, suspended solids, scum, foam or oily slicks;

3.2.b. Deposits or sludge banks on the bottom;

3.2.c. Odors in the vicinity of the waters;

3.2.d. Taste or odor that would adversely affect the designated uses of the affected waters;

3.2.e. Materials in concentrations which are harmful, hazardous or toxic to man, animal or aquatic life;

3.2.f. Distinctly visible color;

3.2.g. Algae blooms or concentrations of bacteria which may impair or interfere with the designated uses of the affected waters;

3.2.h. Requiring an unreasonable degree of treatment for the production of potable water by modern water treatment processes as commonly employed; and

3.2.i. Any other condition, including radiological exposure, which adversely alters the integrity of the waters of the State including wetlands; no significant adverse impact to the chemical, physical, hydrologic, or biological components of aquatic ecosystems shall be allowed.

Antidegradation – Tier 3 Protection for high quality waters in parks and forests, those with unique ecological value

Wetland Definition – 40 CFR §116.3

Waste assimilation – §47-2-6. Water Use Categories.

6.1.a. Waste assimilation and transport are not recognized as designated uses. The classification of the waters must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation.

Numeric criteria –

Appendix E Table 1 footnote C: Parameters that may not be applicable to wetlands (B4) – site-specific criteria are desirable:

- dissolved oxygen (5 mg/l), iron, pH [*table value states that 'higher values (>9.0) due to photosynthetic activity may be tolerated*], threshold odor

Wisconsin

Wetland standards are part of a separate chapter of the Wisconsin code. There is one wetland beneficial use with seven functions to protect, including habitat. Wisconsin has a separate wetland narrative standard that is more detailed than the surface water narrative, includes provisions for hydrological conditions and habitats. Special natural resources include wetlands within federal refuges and state wildlife management areas, but this is not mentioned in statewide antidegradation rules.

Wisconsin has 6,407,454 acres of NWI wetlands.

Beneficial Uses – NR 103.03 Wetland water quality standards.

(1) To protect, preserve, restore and enhance the quality of waters in wetlands and other waters of the state influenced by wetlands, the following water quality related functional values or uses of wetlands, within the range of natural variation of the affected wetland, shall be protected:

(a) Storm and flood water storage and retention and the moderation of water level fluctuation extremes;

(b) Hydrologic functions including the maintenance of dry season streamflow, the discharge of groundwater to a wetland, the recharge of groundwater from a wetland to another area and the flow of groundwater through a wetland;

(c) Filtration and storage of sediments, nutrients or toxic substances that would otherwise adversely impact the quality of other waters of the state;

(d) Shoreline protection against erosion through the dissipation of wave energy and water velocity and anchoring of sediments;

(e) Habitat for aquatic organisms in the food web including, but not limited to fish, crustaceans, mollusks, insects, annelids, planktonic organisms and the plants and animals upon which these aquatic organisms feed and depend upon for their needs in all life stages;

(f) Habitat for resident and transient wildlife species, including mammals, birds, reptiles and amphibians for breeding, resting, nesting, escape cover, travel corridors and food; and

(g) Recreational, cultural, educational, scientific and natural scenic beauty values and uses.

Narrative Standard – NR 103.03 Wetland water quality standards.

(2) The following criteria shall be used to assure the maintenance or enhancement of the functional values identified in sub. (1):

(a) Liquids, fill or other solids or gas may not be present in amounts which may cause significant adverse impacts to wetlands;

(b) Floating or submerged debris, oil or other material may not be present in amounts which may interfere with public rights or interest or which may cause significant adverse impacts to wetlands;

(c) Materials producing color, odor, taste or unsightliness may not be present in amounts which may cause significant adverse impacts to wetlands;

(d) Concentrations or combinations of substances which are toxic or harmful to human, animal or plant life may not be present in amounts which individually or cumulatively may cause significant adverse impacts to wetlands;

(e) Hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent significant adverse impacts on:

2. Water currents, erosion or sedimentation patterns;

3. Water temperature variations;

4. The chemical, nutrient and dissolved oxygen regime of the wetland;

5. The movement of aquatic fauna;

6. The pH of the wetland; and

7. Water levels or elevations.

(f) Existing habitats and the populations of wetland animals and vegetation shall be maintained by:

1. Protecting food supplies for fish and wildlife,

2. Protecting reproductive and nursery areas, and

3. Prevent conditions conducive to the establishment and proliferation of nuisance organisms.

Special wetlands –

NR 103.04 Wetlands in areas of special natural resource interest. Wetlands in areas of special natural resource interest includes those wetlands both within the boundary of designated areas of special natural resource interest and those wetlands which are in proximity to or have a direct hydrologic connection to such designated areas. For purposes of this chapter, the following are designated as areas of special natural resource interest:

(1) Cold water communities as defined in NR 102.04 (3) (a), including all trout streams and their tributaries and trout lakes;

(2) Lakes Michigan and Superior and the Mississippi river;

(3) State and federal designated wild and scenic rivers, designated state riverways and state designated scenic urban waterways [...]

(4) Unique and significant wetlands identified in special area management plans, special wetland inventory studies, advanced delineation and identification studies and areas designated by the United States environmental protection agency under section 404(c), 33 USC 1344 (c);

(5) Calcareous fens;

(6) Habitat used by state or federally designated threatened or endangered species

(7) State parks, forests, trails and recreation areas;

(8) State and federal fish and wildlife refuges and fish and wildlife management areas;

(9) State and federal designated wilderness areas

(10) Designated or dedicated state natural areas established under ss 23.27 to 23.29, stats; (11) Wild rice waters; and

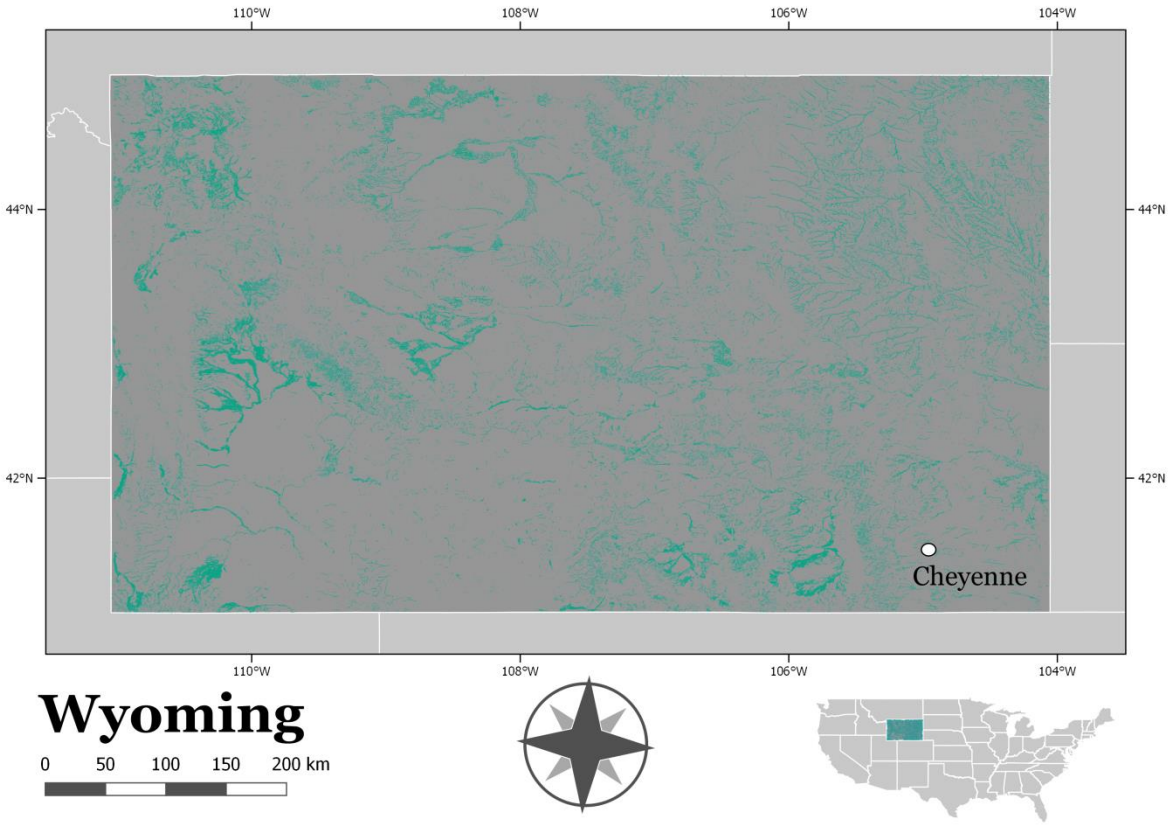
(12) Any other surface waters identified as outstanding or exceptional resource waters in NR 102.

Antidegradation – antidegradation not addressed in Chapter NR 103 [*wetland water quality standards*]; special natural resource wetlands not mentioned in Chapter NR 102 [*statewide water quality standards*].

Wetland Definition – NR 103.02 (5) "Wetlands" means an area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions.

Wyoming

Wyoming includes wetlands in the definition of waters of the state and defines wetlands in the code. There is no wetland-specific beneficial use but the code specifies the potential uses each surface water class may provide, and wetlands are usually Class 3 (Aquatic life other than fish). The narrative surface water standard includes additional provisions for wetlands, but excludes effluent-dominated wetlands. Wyoming also identifies the subset of standards that apply during drought periods. The code includes a provision for consulting with the State Engineer on proposed diversions.



Wyoming has 937,660 acres of freshwater wetlands according to NWI.

Beneficial Use –Section 3

(g) Aquatic life other than fish. This use includes water quality and habitat necessary to sustain populations of organisms other than fish in proportions which make up diverse aquatic communities common to the waters of the state. This use does not include the protection of human pathogens, insect pests, aquatic invasive species or other organisms which may be considered "undesirable" by the Wyoming Game and Fish Department or the U.S. Fish and Wildlife Service within their appropriate jurisdictions.

(h) Wildlife. The wildlife use includes protection of water quality to a level which is safe for contact and consumption by avian and terrestrial wildlife species.

Surface Water Classes and Uses

Class 3, Aquatic Life Other than Fish. Class 3 waters are waters, other than those designated as Class 1, that are intermittent, ephemeral or isolated waters and because of natural habitat conditions, do not support nor have the potential to support fish populations or spawning, or certain perennial

waters which lack the natural water quality to support fish (e.g. geothermal areas). Class 3 waters provide support for invertebrates, amphibians, or other flora and fauna which inhabit waters of the state at some stage of their life cycles. Uses designated on Class 3 waters include aquatic life other than fish, recreation, wildlife, industry, agriculture and scenic value. Generally, waters suitable for this classification have wetland characteristics, and such characteristics will by a primary indicator used in identifying Class 3 waters.

Class 3A waters are isolated waters including wetlands that are not known to support fish populations or drinking water supplies and where those uses are not attainable.

Class 3B waters are tributary waters including adjacent wetlands that are not known to support fish populations or drinking water supplies and where those uses are not attainable. Class 3B waters are intermittent and ephemeral streams with sufficient hydrology to normally support and sustain communities of aquatic life including invertebrates, amphibians, or other flora and fauna which inhabit waters of the state at some stage in their life cycles. In general, 3B waters are characterized by frequent linear wetland occurrences or impoundments within or adjacent to the stream channel over its entire length. Such characteristics will be a primary indicator used in identifying Class 3B waters.

Class 3C waters are perennial streams without the natural water quality to support fish or drinking water supplies but do support wetland characteristics. These may include geothermal waters and waters within naturally high concentrations of dissolved salts or metals or pH extremes.

Class 3D Effluent dependent waters which are known to support communities of aquatic life other than fish and where the existing aquatic habitat would be significantly reduced in terms of aerial extent, habitat diversity or ecological value if the effluent flows are removed or reduced. Class 3D waters are protected to the extent that the existing aquatic community, habitat and other designated uses are maintained and the water quality does not pose a health risk or hazard to humans, livestock or wildlife.

Narrative Standard – Sections 12-33

Section 12. Protection of Wetlands. Point or nonpoint sources of pollution shall not cause the destruction, damage, or impairment of naturally occurring wetlands except when mitigated through an authorized wetlands mitigation process. When approving mitigation, the department may consider both the ecological functions and the wetland value of the disturbed wetlands.

This section does not apply to wetlands created by point or nonpoint sources, nor are such wetlands required to be maintained through continuation of such discharges. Similarly, any man-made wetlands or enhancements which have been credited in the state wetland banking program are not required to be maintained until the credit is used for mitigation purposes. These areas will, however, be protected from discharges of wastes, toxic substances or chemical pollutant as are any other waters of the state.

Section 11(c) The narrative water quality standards in Sections 14, 15, 16, 17, 28 and 29(b) of these regulations shall be enforced at all streamflow conditions.

Section 14. Dead Animals and Solid Waste. Dead animals or solid waste shall not be placed or allowed to remain in Wyoming surface waters. When discovered, removal shall be expeditious unless removal would likely cause more contamination than non-removal. This section should not be interpreted to place a burden on any person to remove dead wildlife from surface waters where the death of the animal occurs under natural or uncontrollable circumstances. Except as authorized through a 404 permit, solid waste shall not be placed or allowed to remain in surface waters of the state, nor shall solid wastes be placed or allowed to remain in any location which would cause or threaten contamination of Wyoming surface waters.

Section 15. Settleable Solids. In all Wyoming surface waters, substances attributable to or influenced by the activities of man that will settle to form sludge, bank or bottom deposits shall not be present in quantities which could result in significant aesthetic degradation, significant degradation of habitat for aquatic life, or adversely affect public water supplies, agricultural or industrial water use, plant life or wildlife.

Section 16. Floating or Suspended Solids. In all Wyoming surface waters, floating and suspended solids attributable to or influenced by the activities of man shall not be present in quantities which could result in significant aesthetic degradation, significant degradation of habitat for aquatic life, or adversely affect public water supplies, agricultural or industrial water use, plant life or wildlife.

Section 17. Taste, Odor and Color. No Class 1, 2 or 3 waters shall contain substances attributable to or influenced by the activities of man that produce taste, odor and color or that would: (a) Of themselves or in combination, impart an unpalatable or off-flavor in fish flesh; (b) Visibly alter the natural color of the water or impart color to skin, clothing, vessel or structures; (c) Produce detectable odor; or (d) Directly or through interaction among themselves, or with chemicals used in existing water treatment processes, result in concentrations that will impart undesirable taste or odor to public water supplies.

Section 24. Dissolved Oxygen. In all Class 2A, 2D and 3 waters, pollution attributable to the activities of man shall not deplete dissolved oxygen amounts to a level which will result in harmful acute or chronic effects to aquatic life, or which would not fully support existing and designated uses.

Section 25. Temperature (a) For Class 1, 2, and 3 waters, pollution attributable to activities of man shall not change ambient water temperatures to levels which result in harmful acute or chronic effects to aquatic life, or which would not fully support existing and designated uses.

Section 26. pH. (a) For all Wyoming surface waters, pollution attributable to the activities of man shall not be present in amounts which will cause the pH to be less than 6.5 or greater than 9.0 standard units. (b) For all Class 1, 2 and 3 waters, pollution attributable to the activities of man shall not change the pH to levels which results in harmful acute or chronic effects to aquatic life, directly or in conjunction with other chemical constituents, or which would not fully support existing and designated uses.

Section 28. Undesirable Aquatic Life. All Wyoming surface waters shall be free from substances and conditions or combinations thereof which are attributable or influenced by the activities of man, in concentrations which produce undesirable aquatic life.

Section 29. Oil and Grease. In all Wyoming surface waters, substances attributable to or influence by the activities of man shall not be present in amounts which would cause: (a) The oil and grease content to exceed 10 mg/L; or (b) The formation of a visible sheen or visible deposits on the bottom or shoreline, or damage or impairment of the normal growth, function or reproduction of human, animal, plant or aquatic life.

Section 32. Biological Criteria. Class 1, 2 and 3 waters of the state must be free from substances, whether attributable to human-induced point source discharges or nonpoint source activities, in concentrations or combinations which will adversely alter the structure and function of indigenous or intentionally introduced aquatic communities.

Antidegradation – No wetland-specific language

Wetland Definition – 2(a) (xii) "Wetlands" means those areas in Wyoming having all three (3) essential characteristics: Hydrophytic vegetation; (B) Hydric soils; and (C) Wetland hydrology. *[not 40 CFR 116.3]*

Definitions –

2(a) (IV) "Man-made wetlands" means those wetlands that are created intentionally or occur incidental to human activities, and includes any enhancement made to an existing wetland which increases its function or value;

2(a) (xi) "Waters of the state" means all surface and groundwater, including waters associated with wetlands, within Wyoming;

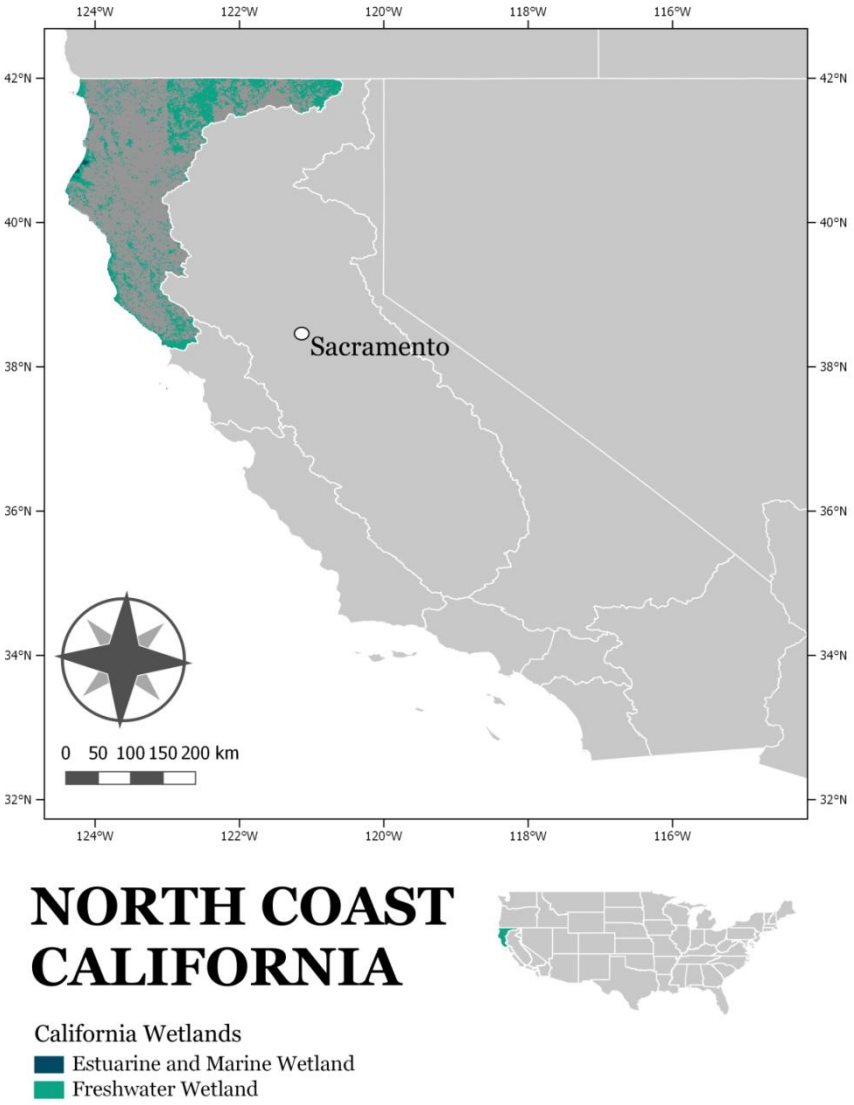
2(a) (xiii) "Wetland value" means those socially significant attributes of wetlands such as uniqueness, heritage, recreation, aesthetics and a variety of economic values.

Water rights –

Section 6. Interstate Compacts, Court Decrees and Water Rights. The department shall, after review and conference with the State Engineer, make recommendations to the State Engineer concerning proposed new diversions which could cause violations of these regulations.

California – North Coast Region (1)

This region has 3 beneficial uses for wetlands: wetland habitat, water quality enhancement (downstream), and flood attenuation and storage. There is a single narrative standard for all surface waters which includes 'biostimulatory substances' criteria. Standards are largely split between estuarine and freshwater wetlands.



The North Coast region of California has 186,941 acres of inland wetlands and 27,338 acres of estuarine and marine wetlands according to the National Wetland Inventory.

Beneficial Use (Chapter 2)

Wetland Habitat (WET) Uses of water that support natural and man-made wetland ecosystems, including, but not limited to, preservation or enhancement of unique wetland functions, vegetation, fish, shellfish, invertebrates, insects, and wildlife habitat.

Water Quality Enhancement (WQE) Uses of waters, including wetlands and other waterbodies, that support natural enhancement or improvement of water quality in or downstream of a waterbody including, but not limited to, erosion control, filtration and purification or naturally occurring water pollutants, streambank stabilization, maintenance of channel integrity, and siltation control.

Flood Peak Attenuation/Flood Water Storage (FLD) Uses of riparian wetlands in flood plain areas and other wetlands that receive natural surface drainage and buffer its passage to receiving waters.

**Both saline and freshwater wetlands can have these beneficial uses but WET is the only existing beneficial use, FLD and WQE are potential beneficial uses*

Narrative Standard (Chapter 3 Objectives for inland surface waters, enclosed bays, and estuaries)

Color – Waters shall be free of coloration that causes nuisance or adversely affects beneficial uses.

Tastes and Odors – Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable taste or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance or adversely affect beneficial uses. Numeric water quality objectives with regards to taste and odor thresholds have been developed by the State Department of Health Services and the U.S. EPA.

Floating Material – Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.

Suspended Material – Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

Settleable Material – Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or adversely affect beneficial uses.

Oil and Grease – Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses.

Biostimulatory Substances – Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

Sediment – The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

Turbidity – Turbidity shall not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof.

pH - The pH shall conform to those limits listed in Table 3-1. For waters not listed in Table 3-1 and where pH objectives are not prescribed, the pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.2 units in waters with designated marine (MAR) or saline (SAL) beneficial uses nor 0.5 units within the range specified above in fresh waters with designated COLD or WARM beneficial uses.

Dissolved Oxygen - Dissolved oxygen concentrations shall conform to those limits listed in Table 3-1.

Bacteria – The bacteriological quality of waters of the North Coast Region shall not be degraded beyond natural background levels. In no case shall coliform concentrations in waters of the North Coast Region exceed the following: [*50/100 ml REC-1, 43/100 ml SHELL*]

Temperature – [...] At no time or place shall the temperature of WARM intrastate waters be increased more than 5°F above natural receiving water temperature.

Toxicity – All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the Regional Water Board.

Pesticides – No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. There shall be no bioaccumulation of pesticide concentrations found in bottom sediments or aquatic life.

Radioactivity – Radionuclides shall not be present in concentrations which are deleterious to human, plant, animal or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or indigenous aquatic life.

Antidegradation – (Chapter 3) no wetland-specific language in the antidegradation policy, single policy for all surface waters.

Wetland definition – 40 CFR § 116.3 definition

California – San Francisco Bay Region (2)

Instead of establishing a wetland beneficial use, this region identified which of 17 existing beneficial uses each of 5 wetland classes may support. The Wildlife Habitat use is the only one that explicitly mentions wetlands (this use mentions protecting against avian botulism outbreaks). The regional Water Quality Plan includes justification for regulating wetlands as waters of the state. This region has also identified site-specific standards for large salt marshes (an important regional type). Region 2 has one surface water narrative standard rather than have any wetland-specific pieces. Implementation chapter (4) specifies reviewing proposed water diversions in order to protect water quality. Plans and Policies chapter (5) discusses policy on wastewater-created wetlands. Standards are largely split between estuarine and freshwater wetlands.

The San Francisco Bay region of California has 75,158 acres of freshwater wetlands and 86,240 acres of estuarine and marine wetlands according to the National Wetland Inventory.

Beneficial Uses (Chapter 2)

2.1.20 Wildlife Habitat (WILD) Uses of waters that support wildlife habitats, including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl. The two most important types of wildlife habitat are riparian and wetland habitats. These

habitats can be threatened by development, erosion, and sedimentation, as well as by poor water quality.

The water quality requirements of wildlife pertain to the water directly ingested, the aquatic habitat itself, and the effect of water quality on the production of food materials. Waterfowl habitat is particularly sensitive to changes in water quality. Dissolved oxygen, pH, alkalinity, salinity, turbidity, settleable matter, oil, toxicants, and specific disease organisms are water quality characteristics particularly important to waterfowl habitat. Dissolved oxygen is needed in waterfowl habitats to suppress development of botulism organisms; botulism has killed millions of waterfowl. It is particularly important to maintain adequate circulation and aerobic conditions in shallow fringe areas of ponds or reservoirs where botulism has caused problems.

Table 2-3: Examples of Existing (e) and Potential (p) Beneficial Uses of Selected Wetlands

	Type of wetland				
Beneficial Use	Marine	Estuarine	Riverine	Lacustrine	Palustrine
Agricultural Supply (AGR)		e	e	e	e
Cold Freshwater Habitat (COLD)			e	e	e
Commercial, and Sport Fishing (COMM)	e	e			
Estuarine Habitat (EST)		e			
Freshwater Replenishment (FRSH)			e	e	e
Groundwater Recharge (GWR)	e	e	e	e	e
Industrial Service Supply (IND)		e	p	p	
Marine Habitat (MAR)	e				
Fish Migration (MIGR)	e	e	e	e	
Navigation (NAV)	e	e	e	e	e
Water Contact Recreation (REC-1)	e	e	e	e	e
Noncontact Recreation (REC-2)	e	e	e	e	e
Shellfish Harvesting (SHELL)	e	e	e		
Fish Spawning (SPWN)	e	e	e	e	e
Warm Freshwater Habitat (WARM)			e	e	e
Wildlife Habitat (WILD)	e	e	e	e	e
Preservation of Rare and Endangered Species (RARE)	e	e	e	e	e

Narrative Standard – 3.3 Objectives for Surface Waters – The following objectives apply to all surface waters within the region, except the Pacific Ocean

1.3.1. Bacteria – Table 3-1 provides of summary of bacterial water quality objectives and identifies the sources of those objectives.

1.3.2. Bioaccumulation – Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.

1.3.3. Biostimulatory substances – Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses. Changes in chlorophyll a and associated phytoplankton communities follow complex dynamics that are sometimes associated with a discharge of biostimulatory substances. Irregular and extreme levels of chlorophyll a or phytoplankton blooms may indicate exceedance of this objective and require investigation.

1.3.4. Color – Waters shall be free of coloration that causes nuisance or adversely affects beneficial uses.

1.3.5. Dissolved oxygen – For nontidal waters, the following objectives shall apply: waters designated as cold water habitat (7.0 mg/l minimum), warm water habitat (5.0 mg/l minimum).

1.3.6. Floating material – Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.

1.3.7. Oil and Grease – Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the waters, that cause nuisance, or that otherwise adversely affect beneficial uses.

1.3.8. Population and Community Ecology – All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce significant alterations in population or community ecology or receiving water biota. In addition, the health and life history characteristics of aquatic organisms in waters affected by controllable water quality factors shall not differ significantly from those for the same waters unaffected by controllable water quality factors.

1.3.9. pH – The pH shall not be depressed below 6.5 nor raised above 8.5. This encompasses the pH range usually found in waters within the basin. Controllable water quality factors shall not cause changes greater than 0.5 units in normal ambient pH levels.

1.3.10. Radioactivity – Radionuclides shall not be present in concentrations that result in accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life. Waters designated for use as domestic or municipal supply shall not contain concentrations of radionuclides in excess of the limits specified in Table 4 of Section 64443 [...]

1.3.11. Salinity – Controllable water quality factors shall not increase the total dissolved solids or salinity of waters of the state so as to adversely affect beneficial uses, particularly fish migration and estuarine habitat.

1.3.12. Sediment – The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses. Controllable water quality factors shall not cause a detrimental increase in the concentrations of toxic pollutant in sediments or aquatic life.

1.3.13. Settleable Material – Waters shall not contain substances in concentrations that result in the deposition of material that cause nuisance or adversely affect beneficial uses.

1.3.14. Suspended Material – Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

1.3.15. Sulfide – All water shall be free from dissolved sulfide concentrations above natural background levels. [...] Concentrations of only a few hundredths of a milligram per liter can cause noticeable odor or be toxic to aquatic life. Violation of the sulfide objective will reflect violation of dissolved oxygen objectives as sulfides cannot exist to a significant degree in an oxygenated environment.

1.3.16. Tastes and Odors – Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses.

1.3.17. Temperature – The natural receiving water temperature of inland surface waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses. The temperature of any cold or warm freshwater habitat shall not be increased more than 5^0F (2.8^0C) above natural receiving water temperature.

1.3.18. Toxicity – All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Detrimental responses include, but are not limited to, decreased growth rate and decreased reproductive success of resident or indicator species. There shall be no acute toxicity in ambient waters. [...] There shall be no chronic toxicity in ambient waters. [...] The health and life history characteristics of aquatic organisms in waters affected by controllable water quality factors shall not differ significantly from those for the same waters in areas unaffected by controllable water quality factors.

1.3.19. Turbidity – Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 NTU.

1.3.20. Un-ionized Ammonia – The discharge of wastes shall not cause receiving waters to contain concentrations of un-ionized ammonia in excess of the following limits: annual median 0.025, maximum Central Bay 0.16, maximum Lower Bay 0.4. The intent of this objective is to protect against the chronic toxic effects of ammonia in the receiving waters.

Antidegradation – no wetland-specific language in antidegradation policy

Wetland definition – 40 CFR § 116.3+ "The Water Board recognizes that wetlands frequently include areas commonly referred to as saltwater marshes, freshwater marshes, open or closed brackish water marshes, mudflats, sandflats, unvegetated seasonally ponded areas, vegetated shallows, sloughs, wet meadows, playa lakes, natural ponds, vernal pools, dike baylands, seasonal wetlands, floodplains, and riparian woodlands

Site Specific Standards – Table 2.4 lists uses of 34 significant, mostly saltwater marshes in the region. Primarily EST, RARE, REC1, REC2, SPWN, and WILD

4.23.3 Hydrology – Hydrology is a major factor affecting the beneficial uses of wetlands. To protect the beneficial uses and water quality of wetlands from impacts due to hydrologic modifications, the Water Board will carefully review proposed water diversions and transfers (including groundwater pumping proposals) and require or recommend control measures and/or mitigation as necessary and applicable.

5.2.11 Wetlands – Use of Wastewater to Create, Restore, and Enhance Marshlands – Resolution NOS. 77-1 and 94-086. These resolutions describe the Water Board's policy regarding the use of wastewater to create, restore, maintain, and enhance marshlands. In general, the policy supports the use of wastewater to support new wetland habitat, under the condition that beneficial uses established are fully protected.

California – Los Angeles Region (4)

This region has a specific wetland habitat beneficial use that lists a number of functions wetlands provide (beyond habitat). Region 4 also identified 14 other designated uses that wetlands adjacent to rivers, lakes, and coasts may provide. Two narrative criteria are specific to wetlands (hydrology and habitat) in addition to the narrative standard for all surface waters. State-wide narrative standard includes prohibitions on biostimulatory substances and exotic vegetation.

This region of California has 28,904 acres of inland wetlands and 5,306 acres of estuarine and marine wetlands according to the National Wetland Inventory

Beneficial Uses – Chapter 2

Wetland Habitat (WET) Uses of water that support wetland ecosystems, including, but not limited to, preservation or enhancement of wetland habitats, vegetation, fish, shellfish, or wildlife, and other unique wetland functions which enhance water quality, such as providing flood and erosion control, stream bank stabilization, and filtration and purification of naturally occurring contaminants.

Beneficial Uses by Waterbody Type

Wetlands – include freshwater, estuarine, and saltwater marshes, swamps, mudflats, and riparian areas. Beneficial uses of wetlands include many of the same uses designated for the rivers, lakes, and

coastal waters to which they are adjacent and include REC-1, REC-2, WARM, COLD, EST, MAR, WET, GWR, COMM, SHELL, MIGR, SPWN, WILD and often RARE or BIOL

Narrative Standard – Regional Narrative Objectives for Wetlands

In addition to the regional objectives for inland surface waters (including wetlands), the following narrative objectives apply for the protection of wetlands in the Region.

Hydrology – Natural hydrologic conditions necessary to support the physical, chemical, and biological characteristics present in wetlands shall be protected to prevent significant adverse impacts on:

- Natural temperature, pH, dissolved oxygen, and other natural physical/chemical conditions,
- Movement of aquatic fauna,
- Survival and reproduction of aquatic flora and fauna, and
- Water levels.

Habitat – Existing habitats and associated populations of wetlands fauna and flora shall be maintained by:

- Maintaining substrate characteristics necessary to support flora and fauna which would be present naturally,
- Protecting food supplies for fish and wildlife,
- Protecting reproductive and nursery areas, and
- Protecting wildlife corridors

**Inland surface waters narrative standard includes ammonia, coliform bacteria, bioaccumulation, biochemical oxygen demand, biostimulatory substances, chemical constituents, total residual chlorine, color, exotic vegetation, floating material, methylene blue activated substances, mineral quality, nitrogen (nitrate, nitrite), oil and grease, dissolved oxygen, pesticides, pH, polychlorinated biphenyls, priority pollutants, radioactive substances, solid suspended or settleable materials, taste and odor, temperature, toxicity, turbidity. Very similar to San Francisco Bay Region.*

Regional Objectives for Inland Surface Waters –

*Biostimulatory Substances – Biostimulatory substances include excess nutrients (nitrogen, phosphorus) and other compounds that stimulate aquatic growth. In addition to being aesthetically unpleasant (causing taste, odor, or color problems), this excessive growth can also cause other water quality problems. Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.

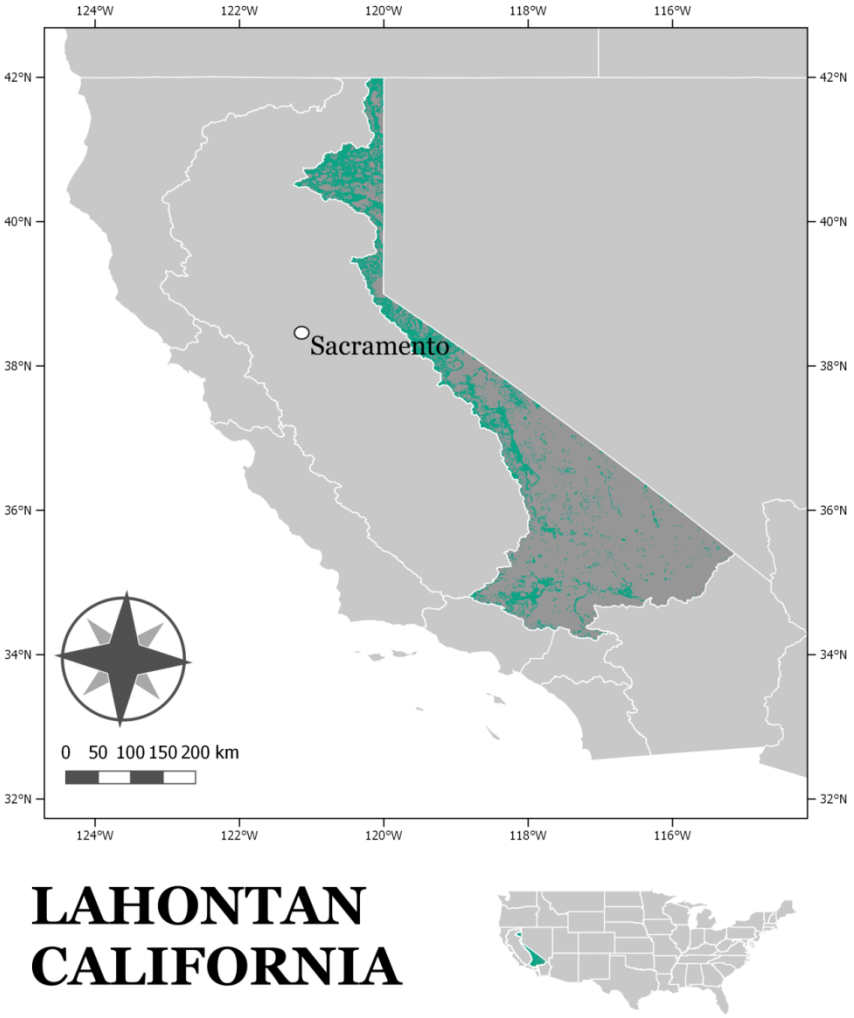
*Exotic Vegetation – Exotic (non-native) vegetation introduced in and around stream courses is often of little value as habitat (food and cover) for aquatic-dependent biota. Exotic plants can quickly out-compete native vegetation and cause other water quality impairments. Exotic vegetation shall not be introduced around stream courses to the extent that such growth causes nuisance or adversely affects beneficial uses.

Antidegradation – no wetland-specific language

Wetland Definition – 40 CFR § 116.3 + wetlands include freshwater, estuarine, and saltwater marshes, swamps, mudflats, and riparian areas

California – Lahontan Region Basin (6)

The Lahontan Region defines two wetland beneficial uses: flood attenuation/storage and water quality enhancement. This statute gives extra attention to naming and classifying wetland types because of limits on what waters can support the WQE use. There is one surface water narrative standard with an additional paragraph on nondegradation of aquatic communities and populations. Also includes a section on applying site-specific adjustments to standards for alkaline and saline wetlands (Application of Narrative and Numerical Water Quality Objectives to Wetlands).



The Lahontan region of California has 359,586 acres of freshwater wetlands according to the NWI.

Beneficial Uses – Chapter 2

Flood Peak Attenuation/Flood Water Storage (FLD). Beneficial uses of riparian wetlands in flood plain areas and other wetlands that receive natural surface drainage and buffer its passage to receiving waters.

Water Quality Enhancement (WQE) – beneficial uses of waters that support natural enhancement or improvement of water quality in or downstream of a water body including, but not limited to, erosion control, filtration and purification of naturally occurring water pollutants, streambank stabilization, maintenance of channel integrity, and siltation control.

*Characteristics which enable surface waters to provide water quality enhancement include, but are not limited to, riparian vegetation and streambank configuration. The definition of this use is broad enough to allow designation of virtually all surface waters of the Lahontan Region. However, this use is only being added to named wetlands to give special recognition of the value wetlands provide in improving the water quality of other surface waters.

Table 2-1. Beneficial Uses of Surface Waters of the Lahontan Region include MUN, AGR, GWR, FRSH, REC-1, REC-2, COMM, WARM, COLD, SAL, WILD, RARE, SPWN, WQE, FLD

Narrative Standard – Chapter 3

Water Quality Objectives That Apply to All Surface Waters (including wetlands): ammonia, coliform bacteria, biostimulatory substances, chemical constituents, total residual chlorine, color, dissolved oxygen, floating materials, oil and grease, non-degradation of aquatic communities and populations, pH, radioactivity, sediment, settleable materials, suspended materials, taste and odor, temperature, toxicity, turbidity (*Standard very similar to previous California WQB narratives)*

Nondegradation of Aquatic Communities and Populations – All wetlands shall be free from substances attributable to wastewater or other discharges that produce adverse physiological responses in humans, animals, or plants; or that lead to the presence of undesirable or nuisance aquatic life. All wetlands shall be free from activities that would substantially impair the biological community as it naturally occurs due to physical, chemical and hydrologic processes.

Antidegradation – no wetland-specific language

Site Specific Standards

Application of Narrative and Numerical Water Quality Objectives to Wetlands

Although not developed specifically for wetlands, many surface water narrative objectives are generally applicable to most wetland types. However, the Regional Board recognizes, as with other types of surface waters such as saline or alkaline lakes, that natural water quality characteristics of some wetlands may not be within the range for which the narrative objectives were developed. The Regional Board will consider site-specific adjustments to the objectives for wetlands (bacteria, pH, hardness, salinity, temperature, or other parameters) as necessary on a case-by-case basis.

The numerical criteria to protect one or more beneficial uses of surface waters, where appropriate, may directly apply to wetlands. […] The USEPA numeric criteria for protection of freshwater aquatic life, although not developed specifically for wetlands, are generally applicable to most wetland types. As with other types of surface waters, such as saline or alkaline lakes, natural water quality characteristics of some wetlands may not be within the range for which the criteria were developed. Adjustments for pH, hardness, salinity, temperature, or other parameters may be necessary. The Regional Board will consider developing site-specific objectives for wetlands on a case-by-case basis.

Wetland Classification – *Named wetlands are important, so they gave names to many wetlands. Divided up beneficial use tables into HUCs with rows for named features (including waterbody modifiers), springs/seeps/emergent wetlands, and minor wetlands.*

Wetland Definition – 40 CFR § 116.3+ Wetland types occurring in the Lahontan Region: marsh, emergent wetland, wet meadow, playa lakes/wetlands, slough, and vernal pool

California – Santa Ana Region Basin (8)

This region has no wetland-specific beneficial uses but they identify existing beneficial uses that may apply to wetlands. Region 8 has a single surface water narrative standard with no extras (or exclusions) for wetlands. Narrative standard includes algae criteria.

The Santa Ana region of California has 24,936 acres of freshwater wetlands and 2,171 acres of estuarine and marine wetlands according to the National Wetland Inventory.

Beneficial Uses – Chapter 3

Beneficial uses potentially or currently provided by inland wetlands include MUN, REC1, REC2, WARM, COLD (intermittent), WILD, and RARE.

The intent of including the wetlands category is to provide a more accurate description of the Region's waters. The listing of specific wetlands does not trigger any new or different regulatory actions by the Regional Board.

Narrative Standard – Water Quality Objectives - Inland Surface Waters

The narrative objectives which are included below apply to all inland surface waters within the region, including lakes, streams, and wetlands.

Inland surface water communities and populations, including vertebrate, invertebrate, and plant species, shall not be degraded as a result of the discharge of waste. Degradation is damage to an aquatic community or population with the result that balanced community no longer exists. A balanced community is one that is (1) diverse, (2) has the ability to sustain itself through cyclic seasonal changes, (3) includes necessary food chain species, and (4) is not dominated by pollution-tolerant species, unless that domination is caused by physical habitat limitations. A balanced community also (5) may include historically introduced non-native species, but (6) does not include species present because best available technology has not been implemented, or (7) because site-specific objectives have been adopted, or (8) because of thermal discharges.

Algae – Waste discharges shall not contribute to excessive algal growth in inland surface receiving waters.

Ammonia, Un-ionized - Calculated numerical UIA-N objectives as well as corresponding total ammonia nitrogen concentration for various pH and temperature conditions are shown in Tables 4-2 and 4- 3. Table 4-4 lists the above equations in a form that can be entered into a computer or calculator program.

Boron - Boron concentrations shall not exceed 0.75 mg/L in inland surface waters of the region as a result of controllable water quality factors.

Chemical Oxygen Demand (COD) – Waste discharges shall not result in increases in COD levels in inland surface waters which exceed the values shown in Table 4-1 or which adversely affect beneficial uses.

Chloride – The chloride objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors.

Chlorine, Residual – To protect aquatic life, the chlorine residual in wastewater discharged to inland surface waters shall not exceed 0.1 mg/L.

Color – Waste discharges shall not result in coloration of the receiving waters which causes a nuisance or adversely affect beneficial uses. The natural color of fish, shellfish or other inland surface water resources used for human consumption shall not be impaired.

Dissolved Solids, Total (Total Filterable Residue) – The dissolved mineral content of the waters of the region, as measured by the total dissolved solids test ("Standard Methods for the Examination of Water and Wastewater, 16th Ed.," 1985: 209B (180˚C), p. 95), shall not exceed the specific objectives listed in Table 4-1 as a result of controllable water quality factors.

Floatables – Waste discharges shall not contain floating materials, including solids, liquids, foam or scum, which cause a nuisance or adversely affect beneficial uses.

Fluoride - Fluoride concentrations shall not exceed values specified in the table below in inland surface waters designated MUN as a result of controllable water quality factors.

Hardness (as $CaCO_3$) – The objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors. If no hardness objective is listed in Table 4-1, the hardness of receiving waters used for municipal supply (MUN) shall not be increased as a result of waste discharges to levels that adversely affect beneficial uses.

Metals – The toxicity of these metals varies with water hardness. No fixed hardness value is assumed; objectives are calculated using the hardness of the collected sample.

Methylene Blue-Activated Substances (MBAS) – MBAS concentrations shall not exceed 0.05mg/L I inland surface waters designated MUN as a result of controllable water quality factors.

Nitrate – Nitrate-nitrogen concentrations shall not exceed 45 mg/L (as NO_3) or 10 mg/L (as N) in inland surface waters designated MUN as a result of controllable water quality factors.

Nitrogen, Total Inorganic – The objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors.

Oil and Grease – Waste discharges shall not result in deposition of oil, grease, wax, or other material in concentrations which result in a visible film or in coating objects in the water, or which cause a nuisance or adversely affect beneficial uses.

Oxygen, Dissolved - The dissolved oxygen content of surface waters shall not be depressed below 5mg/L for waters designated WARM, or 6mg/L for waters designated COLD, as a result of controllable water quality factors. In addition, waste discharges shall not cause the median dissolved oxygen concentration to fall below 85% of saturation or the 95th percentile concentration or fall below 75% of saturation within a 30-day period.

Pathogen Indicator Bacteria – Direct measurement of all pathogens is impractical because standard methods have not yet been approved, nor have water quality criteria been established for each and every microorganism that may be harmful. Therefore, the USEPA recommends using surrogate indicators, such as E. coli or enterococcus densities, to demonstrate that water quality is adequate to protect human health against excessive risk of illness to those making deliberate recreational contact with the water where ingestion of water is likely.

pH – The pH of inland surface waters shall not be raised above 8.5 or depressed below 6.5 as a result of controllable water quality factors.

Sodium - The sodium objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors.

Solids, Suspended and Settleable – Inland surface waters shall not contain suspended or settleable solids in amounts which cause a nuisance or adversely affect beneficial uses as a result of controllable water quality factors.

Sulfate – The objectives listed in Table 4-1 shall not be exceeded as a result of controllable water quality factors.

Sulfides – The dissolved sulfide content of inland surface waters shall not be increased as a result of controllable water quality factors.

Surfactants – Waste discharges shall not contain concentrations of surfactants which result in foam in the course of flow or use of the receiving water, or which adversely affect aquatic life.

Taste and Odor – The inland surface waters of the region shall not contain, as a result of controllable water quality factors, taste- or odor-producing substances at concentrations which cause a nuisance or adversely affect beneficial uses. The natural taste and odor of fish, shellfish or other regional inland surface water resources used for human consumption shall not be impaired.

Temperature – The natural receiving water temperature of inland surface waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses. The temperature of waters designated COLD shall not be increased by more than 5˚F as a result of controllable water quality factors. The temperature of waters designated WARM shall not be raised above 90˚F June through October or above 78˚F during the rest of the year as a result of controllable water quality factors. Lake temperatures shall not be raised more than 4˚F above established normal values as a result of controllable water quality factors.

Toxic Substances – Toxic substances shall not be discharged at levels that will bioaccumulate in aquatic resources to levels which are harmful to human health. The concentrations of contaminants in waters which are existing or potential sources of drinking water shall not occur at levels that are harmful to human health. The concentrations of toxic pollutants in the water column, sediments or biota shall not adversely affect beneficial uses.

Turbidity –Increases in turbidity which result from controllable water quality factors shall comply with the following: natural turbidity 0-50 NTU = 20% maximum increase; 50-100 NTU = 10 NTU increase; greater than 100 NTU = 10% maximum increase. All inland surface waters of the region shall be free of changes in turbidity which adversely affect beneficial uses.

Antidegradation – wetlands mentioned in context of water treatment and studies

Wetland Definition – 40 CFR § 116.3 definition + explanation of three parts of wetlands (vegetation, hydrology, soils)

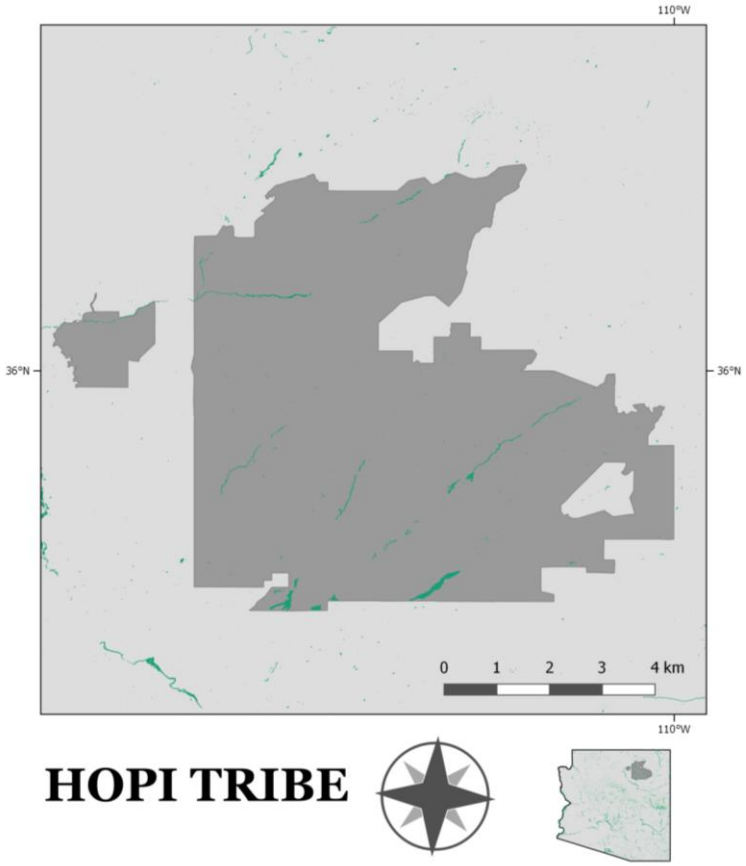
Site-Specific Standards - *Table 3-1 for inland wetlands has existing, potential, intermittent, and expected beneficial uses for 6 named wetlands.*

**This basin includes created wetlands (San Joaquin Freshwater Marsh, Stanfield Marsh, and San Jacinto Wildlife Preserve).*

Tribal Water Quality Standards

Hopi Tribe (AZ)

The Hopi Tribe reservation is located in northern Arizona, surrounded by the Navajo Nation. Designated uses for Reservation streams also apply to ephemeral tributaries and wetlands, including warmwater and ephemeral aquatic and wildlife habitat uses. If water is not present due to natural fluctuations, criteria apply to discharges. The code has no specific provisions for wetlands in the narrative standard or antidegradation policy.



The Hopi Reservation has 9,260 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section 5.101 Streams.

The uses listed below for all perennial, intermittent and ephemeral streams that pass through the Hopi Reservation, including all tributaries, branches, springs, standing waters, and wetlands thereof: A&Ww, FBC, PBC, AgL, AgI, GWR

A. Aquatic and Wildlife (Warm Water Habitat) (A&Ww). A warm water habitat is a stream reach, lake, or impoundment where water temperature and other characteristics are suitable for support and propagation of animals, plants, or other organisms (excluding salmonids). Standards specific to the use are presented in Appendix A.

C. Aquatic and Wildlife (Ephemeral) (A&We). An ephemeral habitat is a stream reach, lake, or other water body where water temperature and other characteristics are periodically suitable for support and propagation of animals, plants, or other organisms (excluding salmonids). Standards specific to the use are presented in Appendix A.

E. Full Body Contact (FBC). Full body contact means the use of a surface water that causes the human body to come into direct contact with the water, ranging from partial submergence to the point of complete submergence, such as swimming, wading, and hand wetting. The use is such that ingestion

of the water is likely to occur and certain sensitive body organs, such as the eyes, ears or nose, may be exposed to direct contact with the water. Where the FBC use designation applies, the open water shall be free from algae in concentrations causing a nuisance condition or causing gastrointestinal or skin disorders. Standards specific to the use are presented in Appendix A.

F. Partial Body Contact (PBC). Partial body contact means the use of a stream reach, spring, reservoir, and other water body in which contact with the water may, but need not, occur and in which the probability of ingesting water is minimal; examples are fishing and boating. Where the PBC use applies, the open water shall be free from algae in concentrations causing a nuisance condition or causing gastrointestinal or skin disorders. Standards specific to the use are presented in Appendix A.

G. Agricultural Irrigation (AgI) and Agricultural Livestock Watering (AgL). Agricultural irrigation means the use of surface waters for irrigation of crops. Agricultural livestock watering means the use of surface waters as a supply for water consumption by livestock. Standards specific to the uses are presented in Appendix A

J. Groundwater Recharge (GWR). Groundwater recharge use means any surface water that recharges an aquifer. Surface waters designated as groundwater recharge must meet the standards for the aquifer being recharged as well as the surface water standards

Narrative Standard – Chapter 3. General Standards Section 3.101

The following General Standards apply to all surface and groundwaters of the Hopi Tribe, including intermittent and ephemeral streams, provided, however, that where Chapters 4 and 5 set stricter standards for designated water bodies, the stricter standards supersede the General Standards:

A. Stream Bottom Deposits: Surface waters shall be free from contaminants from other than natural causes that may settle and have a deleterious effect on the aquatic biota or that will significantly alter the physical or chemical properties of the water or the bottom sediments.

B. Floating Solids, Oil, and Grease: Surface waters shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes (including visible films of oil, globules of oil, grease, or solids in or on the water, or coatings on stream banks). As a guideline, oil and grease discharged into surface waters shall not exceed 10 mg/liter average or 15 mg/liter maximum.

C. Color: Surface waters shall be free from the true color-producing materials (other than those resulting from natural causes) that create an aesthetically undesirable condition. Color shall not impair the designated and other attainable uses of a water body. Color-producing substances from other than natural sources are limited to concentrations equivalent to 70 color units (CU).

D. Odor and Taste: Contaminants from other than natural causes are limited to concentrations that do not impart unpalatable flavor to fish, that do not result in offensive odor or taste arising from the water, and that do not otherwise interfere with the designated and other attainable uses of a water body. Taste and odor-producing substances from other than natural origins shall not interfere with the production of a potable water supply by modern treatment methods.

E. Nuisance Conditions: Plant nutrients or other substances stimulating algal growth from other than natural causes shall not be present in concentrations that produce objectionable algal densities or nuisance aquatic vegetation, or that result in a dominance of nuisance species instream, or that cause nuisance conditions in any other fashion. Phosphorus and nitrogen concentrations shall not be permitted to reach levels that result in man-induced eutrophication problems. As a guideline, total phosphorus shall not exceed 100 µg/L instream or 50 µg/L in lakes and reservoirs, except in waters highly laden with natural silts or color that reduces the penetration of sunlight needed for plant photosynthesis, or in other waters where it can be demonstrated that algal production will not interfere with or adversely affect designated and other attainable uses. Alternative or additional nutrient limitations for surface waters may be established by the Hopi Tribe and incorporated into water quality management plans.

F. Pathogens: Waters shall be free from pathogens (bacteria, viruses, or parasites). Waters used for irrigation of table crops (e.g., lettuce) shall be free of salmonella and shigella species.

G. Turbidity: Turbidity attributable to other than natural causes shall not reduce light transmission to a point at which aquatic biota are inhibited or to a point that causes an unaesthetic and substantial visible contrast with the natural appearance of the water. Numeric criteria for turbidity are included in Appendix A, Table A-1.

H. Mixing Zones: Where effluent is discharged into surface waters, a continuous zone shall be maintained in which the water is of adequate quality to allow the migration of aquatic life with no significant effect on their population. The cross-sectional area of wastewater mixing zones shall generally be less than one quarter of the cross-sectional area or flow volume of the receiving stream. Mixing zones in lakes may be assessed and limited on a case-by-case basis. Mixing zones containing permitted effluent shall not overlap recreational or ceremonial use sites. Water quality standards shall be maintained throughout zones of passage. Zones of passage in lakes and intermittent streams may be designated on a site-specific basis. The water quality in a zone of passage shall not be permitted to fall below the standards for the designated water body(ies) within which the zone is contained. With regard to toxicity in mixing zones, see Subsection 3.O. Mixing zones are prohibited in ephemeral waters or where there is no water for dilution.

I. Radioactive Materials: Concentrations of radioactive constituents shall not exceed the concentration caused by naturally occurring materials. Numeric criteria for radioactive materials are included in Appendix A, Tables A-1 and A-2.

J. Temperature: The introduction of heat by other than natural causes shall not increase the temperature in a stream, outside a mixing zone, by more than 2.7°C, based upon the monthly average of the maximum daily temperatures measured at mid-depth or 3 feet (whichever is less) outside the mixing zone. In lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.7°C (3°F) above that which existed before the addition of heat of artificial origin, based upon the average of temperatures taken from the surface to the bottom of the lake, or surface to the bottom of the epilimnion (if stratified). The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.

K. Salinity/Mineral Quality (total dissolved solids, chlorides, and sulfates): Existing mineral quality shall not be altered by municipal, industrial, and instream activities, or other waste discharges, so as to interfere with the designated or attainable uses for a water body. An increase of more than one-third over naturally occurring levels or levels that will be detrimental to the salinity levels set in the 2005 Review, Water Quality Standards for Salinity, Colorado River System, October 2005 shall not be permitted. Numeric standards for salinity/mineral quality are presented in Appendix A, Table A-1.

L. pH: Water quality standards for pH, expressed in standard units, are included in Appendix A, Table A-1.

M. Dissolved oxygen: If a stream or other water body is capable of supporting aquatic biota, dissolved oxygen standards presented in Appendix A, Table A-1 shall apply.

N. Fecal coliform and E. coli bacteria: Water quality standards for fecal coliform and E. coli bacteria are presented in Appendix A, Table A-1.

O. Toxic Substances: 1. Toxic substances shall not be present in receiving waters in quantities that are toxic to human, animal, plant, or aquatic life, or in quantities that interfere with the normal propagation, growth, and survival of the sensitive indigenous aquatic biota. Within the mixing zone, there shall be no acute toxicity. There shall be no chronic toxicity at the edge of the mixing zone. For toxic substances lacking EPA-published criteria, biomonitoring data may be used to determine compliance with this narrative standard in accordance with EPA standard acute and chronic biological test protocols

Antidegradation – no wetland specific language

Wetland Definition – 40 CFR §116.3 + regional wetland types cienegas and tinajas

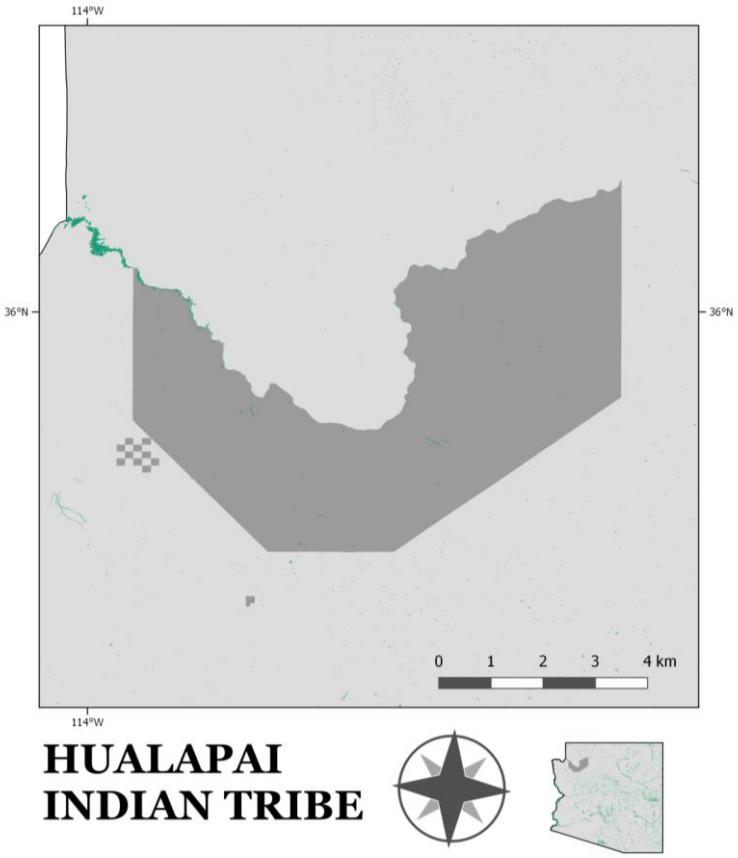
Low flow – (1.105.B) . Standards particular to a use shall be protected at all times, including periods of low flow rates. Where this low flow value is zero due to natural discharge fluctuations, all discharges

shall meet standards for the designated uses. For standing water bodies, standards particular to a use shall be maintained whenever the water body is suitable for the use. The General Standards (Chapter 3) shall be maintained at all times and shall apply to streams, lakes, reservoirs, canals, drains, groundwater, ponds, springs, and wetlands, whether perennial, ephemeral, or intermittent in nature. The standards assigned to a body of water shall be the most stringent standards required to protect all uses designated for that body of water. Reservoirs constructed outside Hopi surface waters used for domestic wastewater treatment are exempt from these standards, provided, however, that the water released from any such reservoir meets the standards that apply to the receiving body of water

**Similar uses as Arizona (with ephemeral waters). Interesting Nuisance condition narrative standard with provisions for establishing waterbody-specific nutrient criteria to avoid man-made eutrophic conditions*

Hualapai Indian Tribe (AZ)

The Hualapai Indian Tribe reservation is located in western Arizona. Hualapai standards cover water resources and wetlands, wetlands (including mudflats) are defined as surface waters, but no uses or special provisions apply to wetlands. Narrative standard applies to all waters not listed in classification tables. Tributary rules specify which aquatic life uses apply to unlisted tributaries.



The Hualapai Indian Tribe reservation has 1,218 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section 301. Designated Uses: [*none listed specifically for wetlands, guessing at which are relevant*]

Aquatic and wildlife (warmwater fishery)

Aquatic and wildlife (ephemeral)

Aquatic and wildlife (effluent dependent water)

Narrative Standard – Section 402. Surface waters

A. All surface waters shall be free from pollutants in amounts or combinations that:

1. Settle to form bottom deposits that inhibit or prohibit the habitation, growth, or propagation of aquatic life or that impair recreational uses;

2. Cause objectionable odor in the area in which the surface water is located;

3. Cause off-taste or odor in drinking water;

4. Cause off-flavor in aquatic organisms or waterfowl;

5. Are toxic to humans, animals, plants, or other organisms;

6. Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or that impair recreational uses; or cause a nuisance condition or cause gastrointestinal or skin disorders

7. Change the color of the surface water from natural background levels of color.

8. Cause or contribute to a violation of a groundwater quality standard described in section 403 below.

B. All surface waters shall be free from oil, grease, and other pollutants that float as debris, foam, or scum; or that cause a film or iridescent appearance on the surface of the water; or that cause a deposit on a shoreline, bank or aquatic vegetation.

Antidegradation – no wetland specific language

Definitions – "Surface water" means any water of the United States, as that phrase is defined in 33 C.F.R. 5 328.3, and includes the following: wetlands, lakes, streams, reservoirs, natural ponds, rivers, creeks, washes, draws, mudflats, sandflats, wetlands, sloughs, backwaters, prairie potholes, wet meadows, playa lakes; all impoundments of waters otherwise defined as surface waters; tributaries of surface waters; and wetlands adjacent to surface waters.

Wetland Definition – 40 CFR §116.3 + cienegas

Section 603. ***Tributary Rule*** - In implementing this Ordinance, the Water Resources Program will apply the following water quality standards to tributary surface waters that are not listed in Appendix B:

A. For an unlisted tributary that is an ephemeral water, the Aquatic and Wildlife (Ephemeral) standards apply.

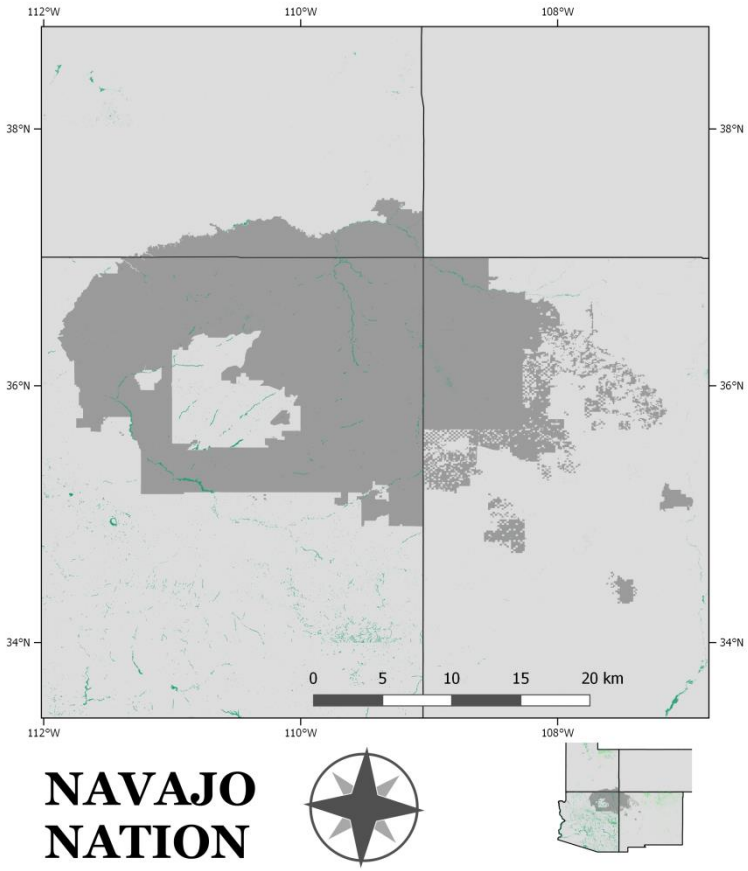
B. For an unlisted tributary that is not an ephemeral water and has salmonids present, the Aquatic and Wildlife (Coldwater Fishery) and Fish Consumption water quality standards apply as well as the water quality standards that have been established for the nearest downstream surface water listed in Appendix B.

C. For an unlisted tributary that is not an ephemeral water and does not have salmonids present, the Aquatic and Wildlife (Warmwater Fishery) and Fish Consumption standards apply as well as the water quality standards which have been established for the nearest downstream surface water listed in Appendix B.

**Water quality standards not applicable to natural conditions or acts of God. Require no detrimental effects to plants in a few places. Subtitle is Water Resources and Wetlands.*

Navajo Nation (AZ, NM, UT)

Most of the Navajo Nation is located in northern Arizona with portions in Utah and New Mexico. Wetlands are included as waters of the tribe. Wetland do not have specified uses, instead a subset of aquatic life, recreation, and wildlife uses are applicable to all waters. The tribe has narrative nutrient standards and an implementation plan for lakes.



The Navajo Nation has 49,011 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – § 205 Designated Use Classification System for Navajo Nation Surface Waters:

D. Applicability of Designated Uses that are designated for all Waters of the Navajo Nation are Fish Consumption (FC), Secondary Human Contact (ScHC), Aquatic and Wildlife Habitat (A&WHbt), and Livestock Watering (LW).

FC Fish Consumption: Water body supports the use of the water by humans for harvesting aquatic organisms for consumption. Harvestable aquatic organisms include, but are not limited to, fish, shellfish, turtles, crayfish, and frogs.

ScHC Secondary Human Contact: Water body supports the use of water which may cause the water to come into direct contact with the skin of the body, but normally not to the point of submergence, ingestion of the water, or contact of the water with membrane material of the body. Such contact would occur incidentally and infrequently. Examples include ceremonial and other cultural uses, boating and fishing.

A&WHbt Aquatic and Wildlife Habitat: Water body supports the use of the water by animals, plants or other organisms, including salmonids and non-salmonids, and non-domestic animals (including migratory birds) for habitation, growth or propagation. Water body supports or is capable of supporting either cold water fishes, including trout species or warm water fishes including bass

species, catfish species, and bluegill species. Water body supports the aquatic communities upon which cold and warm water fishes depend. Cold waters are waters that typically have temperatures below 20 o C. Warm waters are waters that typically have temperatures exceeding 20 o C. Water body supports prey base for non-domestic animals (including migratory birds).

LW Livestock Watering: Water body supports the use of the water by livestock for consumption (ingestion).

Narrative Standard – §202 Narrative Surface Water Quality Standards

A. All Waters of the Navajo Nation shall be free from pollutants in amounts or combinations that, for any duration:

1. Cause injury to, are toxic to, or otherwise adversely affect human health, public safety, or public welfare.

2. Cause injury to, are toxic to, or otherwise adversely affect the habitation, growth, or propagation of indigenous aquatic plant and animal communities or any member of these communities; of any desirable non-indigenous member of these communities; of waterfowl accessing the water body; or otherwise adversely affect the physical, chemical, or biological conditions on which these communities and their members depend.

3. Settle to form bottom deposits, including sediments, precipitates and organic materials, that cause injury to, are toxic to, or otherwise adversely affect the habitation, growth, or propagation of indigenous aquatic plant and animal communities or any member of these communities; of any desirable non-indigenous member of these communities; of waterfowl accessing the water body; or otherwise adversely affect the physical, chemical, or biological conditions on which these communities and their members depend.

4. Cause physical, chemical, or biological conditions that promote the habitation, growth, or propagation of undesirable, non-indigenous species of plant or animal life in the water body.

5. Cause solids, oil, grease, foam, scum, or any other form of objectionable floating debris on the surface of the water body; may cause a film or iridescent appearance on the surface of the water body; or that may cause a deposit on a shoreline, on a bank, or on aquatic vegetation.

6. Cause objectionable odor in the area of the water body.

7. Cause objectionable taste, odor, color, or turbidity in the water body.

8. Cause objectionable taste in edible plant and animal life, including waterfowl, that reside in, on, or adjacent to the water body.

9. Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or that impair recreational uses.

B. All Waters of the Navajo Nation shall be free of toxic pollutants from other than natural sources in amounts, concentrations, or combinations which affect the propagation of fish or which are toxic to humans, livestock or other animals, fish or other aquatic organisms, wildlife using aquatic environments for habitation or aquatic organisms for food, or which will or can reasonably be expected to bioaccumulate in tissues of fish, shellfish, or other aquatic organisms to levels which will impair the health of aquatic organisms or wildlife or result in unacceptable tastes, odors or health risks to human consumers.

C. No person shall place animal carcasses, refuse, rubbish, demolition or construction debris,

Antidegradation –Unique Waters, waters of National and Tribal parks, and wildlife refuges are high quality waters and the quality shall be maintained.

Definitions –

"Waters of the Navajo Nation" means all surface waters including, but not limited to, portions of rivers, streams (including perennial, intermittent and ephemeral streams and their tributaries), lakes, ponds, dry washes, marshes, waterways, wetlands, mudflats, sandflats, sloughs, prairie potholes, wet meadows, playa lakes, impoundments, riparian areas, springs, and all other bodies or accumulations

of water, surface, natural or artificial, public or private, including those dry during part of the year, which are within or border the Navajo Nation. This definition shall be interpreted as broadly as possible to include all waters which are currently used, were used in the past, or may be susceptible to use in interstate, intertribal or foreign commerce. Consistent with federal requirements, the Director may exclude from waters of the Navajo Nation certain waste treatment systems.

"Aquatic and Wildlife Habitat (A&WHbt)" means the use of the water by animals, plants or other organisms, including salmonids and non-salmonids, and non-domestic animals (including migratory birds) for habitation, growth or propagation. Water body supports or is capable of supporting either cold water fishes, including trout species or warm water fishes including bass species, catfish species, and bluegill species. Water body supports the aquatic communities upon which cold and warm water fishes depend. Cold waters are waters that typically have temperatures below 20 o C. Warm waters are waters that typically have temperatures exceeding 20 o C. Water body supports prey base for non-domestic animals (including migratory birds).

Wetland Definition – 40 CFR §116.3

Narrative Nutrient Standard Implementation Plan (§204)

B. The narrative nutrient standard in Section 202(A)(9) is met if sampling conducted during the peak season for lake productivity shows:

1. The mean chlorophyll-a concentration is less than the lower value in the target range chlorophyll-a for the lake category; or

2. The mean chlorophyll-a concentration is within the target range for the lake category and:

a. The mean blue green algae count is at or below 20,000 per milliliter, and

b. The blue green algae count is less than 50 percent of the total algae count, and

c. There is no evidence of nutrient-related impairments such as:

i. An exceedance of dissolved oxygen or pH exceedance;

ii. A fish kill occurring with dissolved oxygen or pH exceedance;

iii. A fish kill or other aquatic organism mortality occurring with algal toxicity;

iv. Secchi depth is less than the lower value prescribed for the lake category;

v. A nuisance algal bloom is present in the lacustrine portion of the lake or reservoir; or

vi. The concentration of total phosphorous, total nitrogen, or total Kjeldahl nitrogen (TKN) is greater than the upper value in the range prescribed for the lake category;

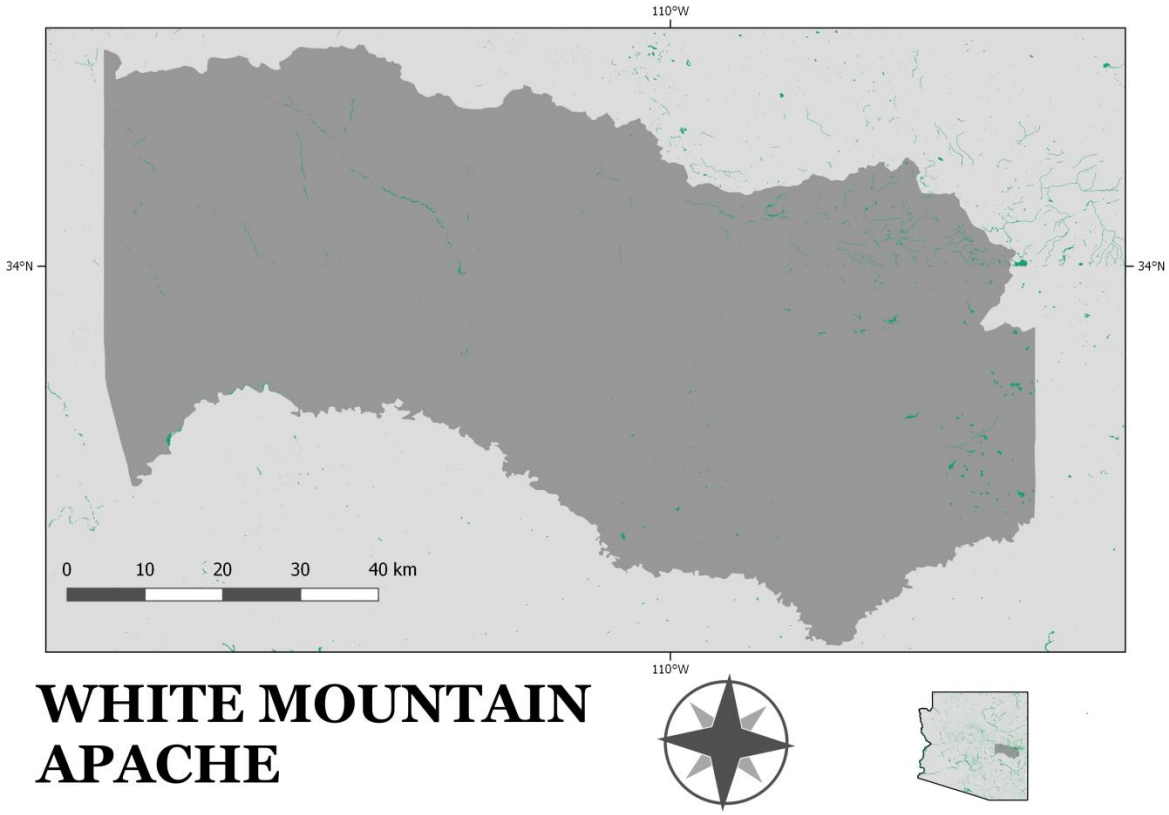
3. Submerged aquatic vegetation covers 50 percent or less of the lake bottom of a shallow lake and there is less than a 5 milligram per liter change in diel dissolved concentrations measured within the photic zone.

Specify "Waters of the Navajo Nation" should be interpreted as broadly as possible to include all waters with are, were, and could be used.

Narrative standard mentions waterfowl and aquatic plants several times

White Mountain Apache Tribe (AZ)

The White Mountain Apache Tribe reservation is located in eastern Arizona. Wetlands in the reservation support a wetland-specific flood control uses and existing livestock + wildlife and plant gathering uses. Several wetlands are classified waters of the reservation.



The White Mountain Apache reservation has 4,328 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section 3.6 - Designated Uses and Specific Criteria

Appendix B - classification of WMAT waters

G. Groundwater Recharge. The above standards for domestic water supply are also applicable in order to protect areas designated for groundwater recharge.

I. Livestock and Wildlife. The following standards are applicable to all perennial, intermittent and ephemeral streams, lakes, wetlands, and other standing tribal waters in order to protect livestock and wildlife uses:

M. Gathering Of Medicinal Or Otherwise Culturally Significant Plants: The standards for Secondary Contact Recreation shall be applied to protect this use. In addition, native riparian and wetland plants shall not be removed without Tribal review and authorization, unless they are being gathered by individual tribal members for private use.

N. Cultural Significance. Actions that disrespect waters of religious significance are prohibited. Potential violations of this standard will be reviewed by the Cultural Advisory Committee. Any actions that may affect these-waters must be reviewed-- and approved under the Tribal Plan and Project Review Process.

O. Flood Control. This standard is designated for all Tribal wetlands that serve to retain or absorb flood waters. Any actions that may affect the long-term capacity of these areas to retain flood waters must be reviewed and approved under the Tribal Plan and Project Review Process. The water quality,

physical, biological and hydrologic characteristics of wetlands shall be maintained. Wetlands shall not be used in lieu of storm water treatment.

D. High-Quality Coldwater Habitat, Including Cold Water Fish Hatchery. All standards set forth in Subsection A of this section apply to the protection of high-quality coldwater habitat and fish hatchery use, with the following exceptions. [*some cienagas*]

Narrative Standard – Section 3.5 - Narrative Water Quality Standards

Tribal waters shall be free of contaminants in such quantity and duration as may, with reasonable probability, injure human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property. In addition, the following narrative standards apply to all Tribal Waters, unless stricter standards are imposed.

A. Bottom Deposits. The bottoms of all Tribal waters shall be free from water contaminants from other than natural causes that will settle and cause deleterious effects to the aquatic biota, including fish, or significantly alter the physical or chemical properties of the bottom.

B. Floating Solids, Oil, and Grease. All waters shall be free from visible oils, scum, foam, grease and other floating materials and suspended substances of a persistent nature resulting from other than natural causes.

C. Color. Materials producing true color resulting from other than natural causes shall not create an aesthetically undesirable condition; nor shall color impair the attainable uses of the water or harm aquatic life.

D. Odor and Taste. Water contaminants from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish, result in offensive odor or taste arising from the water, or otherwise interfere with the existing and attainable uses of the water, nor shall taste and odor-producing substances of other than natural origin interfere with the production of a potable water supply by modern treatment methods.

E. Nuisance Conditions. Nutrients or other substances stimulating algal growth from other than natural causes shall not be present in concentrations that will produce objectionable algal densities, nuisance aquatic vegetation, result in a dominance of nuisance species instream, or otherwise cause nuisance conditions. When stricter requirements are not established elsewhere in this Ordinance, the minimum dissolved oxygen shall be maintained at or above 2 mg/liter in order to prevent nuisance conditions from other than natural causes. The phosphorus and nitrogen concentrations shall not be increased to levels that result in man-induced eutrophication problems. The Tribal Council may establish nutrient limitations for lakes, reservoirs, and streams and shall incorporate such limitations into appropriate water quality management plans.

F. Pathogens. Tribal water shall be virtually free from pathogens which include bacterias viruses or parasites. In particular, waters used for irrigation of table crops shall be virtually free of Salmonella and Shigella species.

G. Turbidity. Turbidity attributable to other than natural causes shall not reduce light transmission to the point that the aquatic biota is inhibited or that will cause an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 NTU over background when background turbidity is 50 NTU or less. When background turbidity is more than 50 NTU, there shall not be more than a 100/0 increase in turbidity Background turbidity may be estimated by measuring levels upstream of the human-caused impacts or during zero runoff periods (greater than five (5) days after most recent event).

H. Mixing Zones. In any perennial waters receiving a waste discharge, a continuous zone shall be maintained where the water is of adequate quality to allow the migration of aquatic life with no significant effect on their population. The cross-sectional area of mixing zones shall generally be less than 1/3 of the cross-sectional area at or above 4Q3 conditions of the receiving stream. In intermittent or ephemeral streams, discharges shall meet all applicable numeric and narrative criteria at the point of discharge with no allowance for mixing zones. There shall be no acute toxicity in mixing zones and no chronic toxicity at the edge of the mixing zone. Numeric acute criteria shall be attained at the point of discharge. Mixing zones shall not overlap sites of primary contact. Requirements for mixing zones

shall be expressed in terms of specific concentration limits for specific parameters and shall be consistent with those established in the water quality management plans and implementation plans developed by the White Mountain Apache Tribe.

I. Radioactive Materials. The radioactivity of Tribal water shall not exceed the maximum natural background concentrations in Tribal waters.

J. Temperature. The introduction of heat by other than natural causes shall not increase temperature outside mixing zones by more than 2.00 C (50 F), based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) outside the mixing zone. In lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.7° C (3° F) above that which existed before the addition of heat of artificial origin, based upon the average of temperatures taken from the surface to the bottom, or the surface to the bottom of the epilimnion (if stratified). Normal daily and seasonal variations of temperature that were present before the addition of heat from other than natural sources shall be maintained. In no case shall heat of artificial origin be permitted when the maximum temperature specified for the reach would thereby be exceeded. High water temperatures caused by unusually high ambient air temperature are not violations of these standards. In cases where dissolved oxygen levels are within 0.5 mg/l of the limit, no increases in temperature will be allowed.

K. Salinity /Mineral Quality (total dissolved solids, chlorides, and sulfates). Existing mineral concentrations shall not be altered by municipal, industrial, or instream activities, or other waste discharges that would interfere with established designated uses. No increase exceeding 115 of naturally-occurring levels shall be permitted.

L. pH. The pH of a stream or a lake shall not fluctuate in excess of 1.0 pH unit over a period of24 hours for other than natural causes and shall be within a range of 6.5-9.0.

M. Dissolved Oxygen. If a surface water body is capable of supporting aquatic life, dissolved oxygen concentration shall be maintained at a minimum of 5.0 mg/I.

N. Dissolved Gases. Surface water shall be free of nitrogen and other dissolved gases at levels above 1100/0 saturation when this supersaturation is attributable to municipal, industrial, or other discharges.

O. Total Residual Chlorine. Total chlorine residual, after the allowances for a mixing zone as defined herein, shall not exceed O. 1 mg/l.

P. Toxic Substances. (1) Toxic substances, including, but not limited to, pesticides, herbicides, heavy metals, and organic chemicals, shall not be present in Tribal waters above those levels identified in 40 C.F.R. § 131.36 (incorporated herein by reference except as given in Q. below) as toxic to human, animal, plant, or aquatic life, or to interfere with the normal propagation, growth, and survival of the aquatic biota, including fish. There shall be no acute toxicity. At the edge of mixing zones there shall be no chronic toxicity.

Q. Mercury and Arsenic. (1) The standard for concentrations of mercury in Tribal waters will be assessed and based on fish tissue analysis and consumption levels in accordance with current and accepted protocol of the U. S. Environmental Protection Agency and U.S. Fish and Wildlife Service. The fish consumption standard for wildlife is based on U.S. Fish and Wildlife Service criteria and is 0. 1 mg/kg (dry weight) of whole fish samples composited from a minimum of four (4) fish of the same species gathered from the same sampling location. The fish consumption standard protective of human health is based on the Federal Food and Drug Administration (FDA) criteria of 1.0 mg/kg (dry weight) of the edible portion of fish samples compo sited from a minimum of four (4) fish of the same species gathered from the same sampling location. Should results from two separate sampling events show mercury concentrations greater than the FDA criteria, the Tribal Environmental Planning Office or designee will contact U.S. EP A Region 9 and, if necessary, issue a fish consumption advisory for the affected area.

Antidegradation – no wetland-specific language.

Wetland Definition – 40 CFR §116.3 + created wetlands, minus constructed wetlands

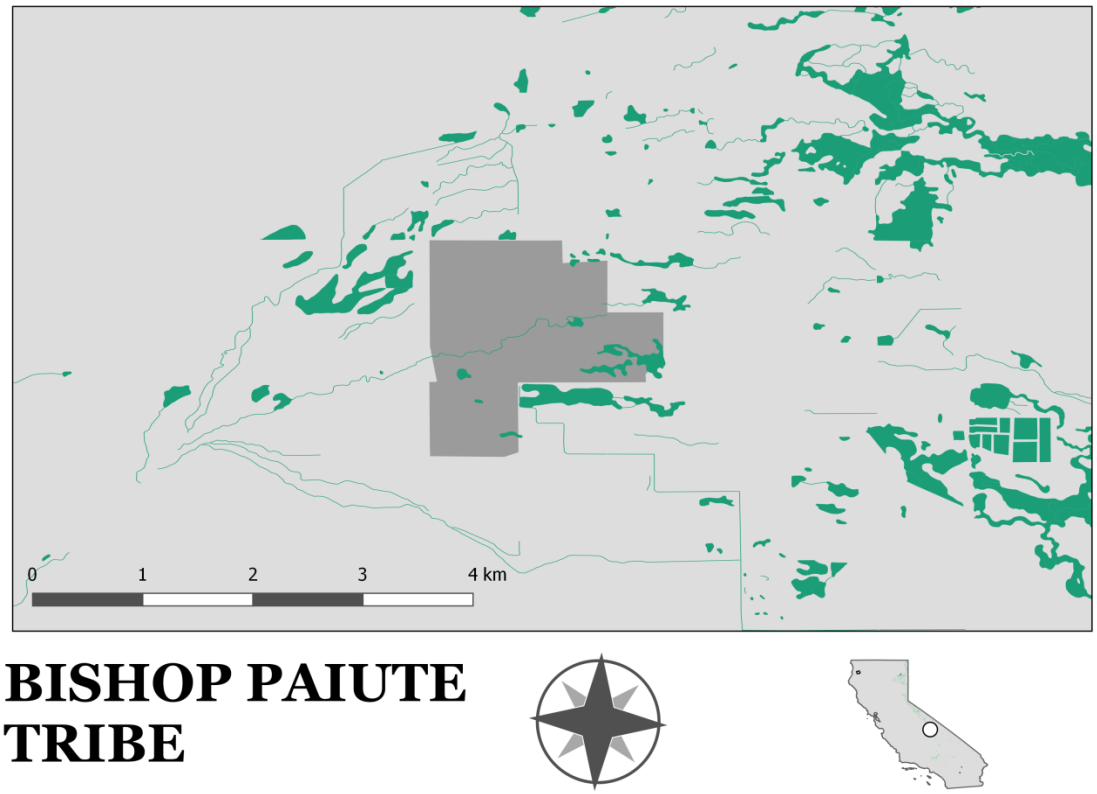
Numeric criteria - for Livestock and Wildlife: aluminum, boron, cadmium, chromium, cobalt, copper, lead, selenium, vanadium, zinc, radium^{226} + radium^{228}

Definitions – (26) "Eutrophication": A natural aging process during which a lake, estuary, or bay evolves into a bog, marsh or wetland and eventually disappears. During the later stages of eutrophication the waterbody is choked by abundant plant life as the result of increased amounts of nutritive compounds such as nitrogen and phosphorus. Human activities, particularly nutrient loading from human or animal wastes, can accelerate the process.

(43) "Intermittent Lake": A type of wetland which may contain standing water for extended periods, but not throughout the year.

Bishop Paiute Tribe (CA)

The Bishop Paiute Tribe reservation is located in the Lahontan region of California. The tribal standards have no wetland-specific designated use but have classified uses for emergent wetlands as a class and some named wetlands. The code specifies the narrative and numeric criteria are applicable to wetlands, especially wetlands that recharge municipal supply. Allow for site-specific adjustments to bacteria, pH, hardness, salinity, and temperature on a site-by-site basis. Rules apply only to groundwater, Tribe does not use surface water.



The Bishop Paiute Tribe reservation has 55 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Table 1. Designated Uses for Surface Waters of the Bishop Paiute Tribe (*line 3 – Commercial Park Wetland; line 12 – All other emergent wetlands/wet meadows within tribal jurisdiction not named above*):

AGR – Agricultural Supply Designated uses of waters used for farming, horticulture, or ranching, including, but not limited to, irrigation, stock watering, and support of vegetation for range grazing.

GWR – Ground Water Recharge Designated uses of waters used for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater.

REC-1 – Water Contact Recreation Designated uses of waters used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, and use of natural hot springs.

REC-2 – Non-contact Water Recreation Designated uses of waters used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to picnicking, sun bathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.

WARM – Warm Freshwater Habitat Designated uses of waters that support warm water ecosystems including, but not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.

WILD – Wildlife Habitat Designated uses of waters that support wildlife habitats including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.

RARE – Rare, Threatened, or Endangered Species Designated uses of waters that support habitat necessary for the survival and successful maintenance of plant or animal species established under state and/or federal law as rare, threatened or endangered.

WQE – Water Quality Enhancement Designated uses of waters that support natural enhancement or improvement of water quality in or downstream of a water body including, but not limited to, erosion control, filtration and purification of naturally occurring water pollutants, stream bank stabilization, maintenance of channel integrity, and siltation control

CULT – Cultural Designated uses of waters that have religious, ceremonial, or subsistence provides a role in Bishop Paiute Tribal culture. In specific cases this term can include dependence on locally caught fish or other aquatic organisms as a source of food.

Narrative Standard – 3.5.1 Water Quality Criteria Which Apply to All Surface Waters

Ammonia – The neutral, unionized ammonia species (NH3 ") is highly toxic to freshwater fish. The fraction of toxic NH3 " to total ammonia species (NH4 + NH3 ") is a function of temperature and pH. Tables 4, 5, and 6, were derived from USEPA ammonia criteria for freshwater.

Bacteria, Coliform – Waters shall not contain elevated concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes. Specifically, E.coli coliform concentrations during any 30-day period shall not exceed the values indicated in the table below.

Nutrients – Waters shall not contain nutrients in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect designated uses. Numeric criteria for nitrates and phosphorus for Bishop Creek are presented in Table 3.

Chemical Constituents – Waters designated as MUN shall not contain concentrations of chemical constituents in excess of the maximum contaminant level (MCL) specified in the California Department of Health Services (DHS) MCLs. Waters designated as AGR shall not contain concentrations of chemical constituents in amounts that adversely affect designated uses (i.e., agricultural purposes). Waters shall not contain concentrations of chemical constituents in amounts that adversely affect designated uses.

Color – Waters shall be free of coloration that causes nuisance or adversely affects designated uses.

Dissolved Oxygen – The dissolved oxygen concentration, as percent saturation, shall not be depressed by more than 10 percent, nor shall the minimum dissolved oxygen concentration be less than 80 percent of saturation. For waters with designated uses of COLD, COLD with SPWN, WARM, and WARM with SPWN, the minimum dissolved oxygen concentration shall not be less than that specified in Table 7.

Floating Materials – Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect designated uses. For natural high quality waters, the concentrations of floating material shall not be altered to the extent that such alterations are discernable at the 10 percent significance level.

Methylmercury –Water Column: The methylmercury criteria for human health is contained within the National Recommended Water Quality Criteria 2002 (EPA 822-R-02-0470) as amended in the 2003 Federal Register (Federal Register: December 3 1, 2003 (Volume 68, Number 250)).

Fish Tissue: Methylmercury shall not be present in concentrations in fish tissue in excess of the maximum contaminant level (MCL) of 0.3 methyl mercury/kg fish (EPA 823-R-01-001).

Oil and Grease – Waters shall not contain oils, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect designated uses. For natural high quality waters, the concentration of oils, greases, or other film or coat generating substances shall not be altered.

Anti-Degradation of Aquatic Communities and Populations –All wetlands shall be free from substances attributable to wastewater or other discharges that produce adverse physiological responses in humans, animals, or plants; or which lead to the presence of undesirable or nuisance aquatic life. All wetlands shall be free from activities that would substantially impair the biological community as it naturally occurs due to physical, chemical and hydrologic processes.

Pesticides – For the purposes of this Plan, pesticides are defined to include insecticides, herbicides, rodenticides, fungicides, pesticides and all other economic poisons. An economic poison is any substance intended to prevent, repel, destroy, or mitigate the damage from insects, rodents, predatory animals, bacteria, fungi or weeds capable of infesting or harming vegetation, humans, or animals (CA Agriculture Code 12753). Pesticide concentrations, individually or collectively, shall not exceed the lowest detectable level, using the most recent detection procedures available. There shall not be an increase in pesticide concentrations found in bottom sediments. There shall be no detectable increase in bioaccumulation of pesticides in aquatic life.

pH – In fresh waters with designated uses of COLD or WARM, changes in normal ambient pH levels shall not exceed 0.5 pH units. For all other waters of the Region, the pH shall not be depressed below 6.5 nor raised above 8.5. The Tribe recognizes that some waters of the Region may have natural pH levels outside of the 6.5 to 8.5 range. Compliance with the pH objective for these waters will be determined on a case-by-case basis.

Radioactivity – Radionuclides shall not be present in concentrations which are deleterious to human, plant, animal, or aquatic life, nor which result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life. Waters designated as MUN shall not contain concentrations of radionuclides in excess of the limits specified in the National Primary Drinking Water Regulations, 1996.

Sediment – The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect the water for designated uses.

Settleable Materials – Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or that adversely affects designated uses. For natural high quality waters, the concentration of settleable materials shall not be raised by more than 0.1 ml/L.

Suspended Materials – Waters shall not contain suspended materials in concentrations that cause nuisance or that adversely affect designated uses. For natural high quality waters, the concentration of total suspended materials shall not be altered to the extent that such alterations are discernible at the 10 percent significance level.

Taste and Odor – Waters shall not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish or other edible products of aquatic origin, that cause nuisance, or that adversely affect designated uses. For naturally high quality waters, the taste and odor shall not be altered.

Temperature – The natural receiving water temperature of all waters shall not be altered unless it can be demonstrated to the satisfaction of the Tribe that such an alteration in temperature does not adversely affect designated uses. For waters designated WARM, water temperature shall not be altered by more than five degrees Fahrenheit (5°F) above or below the natural temperature. For waters designated COLD, the temperature shall not be altered.

Total Residual Chlorine – Total residual chlorine in any ambient water shall not exceed 0.002 mg/L median and 0.003 mg/L maximum.

Toxic Substances – The concentration of toxic pollutants for all surface waters shall not exceed the more stringent of the aquatic life criteria for freshwater or the human health concentration criteria for consumption of water and organisms or for consumption of organisms only in the priority toxic

pollutant table of the USEPA National Recommended Water Quality Criteria, 2002, or the most recent version.

Turbidity – Waters shall be free of changes in turbidity that cause nuisance or adversely affect the designated uses. Increases in turbidity shall not exceed natural levels by more than 10 percent.

Antidegradation – refuges and parks are Outstanding National Resource Waters

Wetland Definition – Any area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, such as swamps, marshes, bogs, and similar areas. This includes wetlands created, restored or enhanced as part of a mitigation procedure. This does not include constructed wetlands intentionally constructed from non-wetland sites outside waters of the Reservation

Definitions – SAL Inland Saline Water Habitat Designated uses of waters that support inland saline water ecosystems including, but not limited to, preservation and enhancement of aquatic saline habitats, vegetation, fish, and wildlife, including invertebrates.

Introduction – The Tribe relies on ground water produced from three wells on the Reservation. The Tribe intends to protect the ground water resources for municipal (domestic/drinking water) and industrial use, and the surface water resources for agricultural, industrial, ground water recharge, water contact recreation, non-contact water recreation, commercial and sportfishing, cold freshwater habitat, wildlife habitat, spawning, reproduction and development, and cultural (including religious) uses. The Tribe has initiated a complete assessment of the waters of the Reservation.

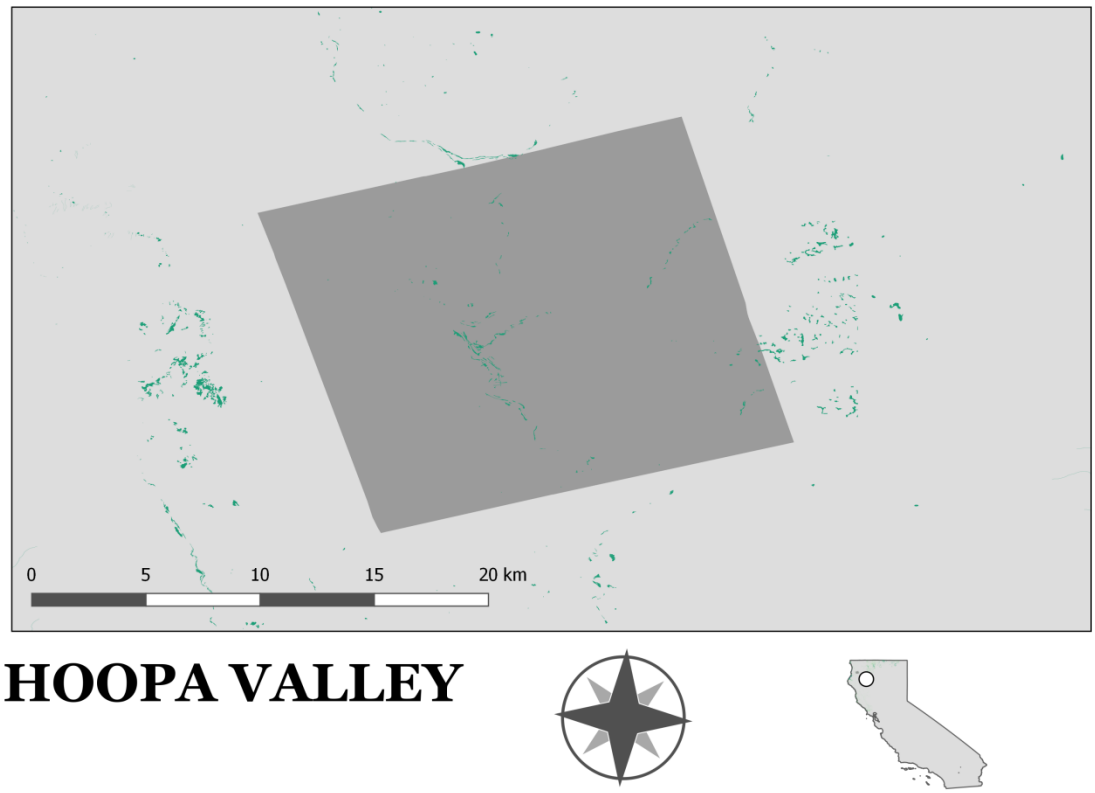
Application of Narrative and Numerical Water Quality Criteria to Wetlands – Although not developed specifically for wetlands, many surface water narrative criteria are generally applicable to most wetland types. However, the Tribe recognizes, as with other types of surface waters such as saline or alkaline lakes, that natural water quality characteristics of some wetlands may not be within the range for which the narrative criteria were developed. The Tribe will consider site-specific adjustments to the criteria for wetlands (bacteria, pH, hardness, salinity, temperature, or other parameters) as necessary on a case-by-case basis.

The numerical criteria to protect one or more designated uses of surface waters, where appropriate, may directly apply to wetlands. For example, wetlands which actually are, or which recharge, municipal water supplies should meet human health criteria. The USEPA numeric criteria for protection of freshwater aquatic life, as listed in Quality Criteria for Water-1986, although not developed specifically for wetlands, are generally applicable to most wetland types. As with other types of surface waters, such as saline or alkaline lakes, natural water quality characteristics of some wetlands may not be within the range for which the criteria were developed. Adjustments for pH, hardness, salinity, temperature, or other parameters may be necessary. The Tribe will consider developing site-specific criteria for wetlands on a case-by-case basis.

Classified Wetlands – Commercial Park Wetland, all emergent and meadow wetlands

Hoopa Valley Indian Reservation (CA)

The Hoopa Valley Indian Reservation is located in the North Coast region of California. The reservation does not have wetland-specific designated uses, but wetlands and specific wetland types are defined as surface water resources and classified in standards. The tribal Wetland policy (delineation, no net loss, applicable surface and groundwater criteria) is part of narrative standards. The code specifies that wildlife/aquatic life habitats for waterbodies without designated uses have the uses of the nearest downstream waterbody. The code describes issues faced with both water quality and quantity.



The Hoopa Valley Reservation has 291 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – 2.1 Use Designation:

Water bodies within the Reservation, which do not have uses designated for them innately, maintain beneficial uses for wildlife habitat and/or aquatic life habitats. These habitat designations in no way affect the presence or absence of other beneficial uses in these water bodies. Further classification will be based on the size of the water body and its historic and environmental significance.

(J) Preservation of Areas of Special Biological Significance (BIOL) includes aquatic and wildlife refuges, ecological reserves and designated areas of special biological significance.

(K) Wildlife Habitat (WILD) provides a water supply and vegetative habitat for the maintenance of wildlife.

Narrative Standard – 3.6 Narrative Criteria

3.6.1 Surface Waters: All surface waters of the reservation, including mixing zones, shall be free from substances attributable to human activity in accordance with the following:

3.6.1.1 Benthic Macroinvertebrate Populations: Site specific species composition shall not be degraded in both abundance and structure to a level that would threaten fish habitat conditions, water quality, and general watershed health. Bioassessment procedures for identifying macroinvertebrates in the laboratory and information analysis are set forth and standardized in the California Stream Bioassessment Procedure (CSBP) document. Biological monitoring maybe implemented to determine impacts on aquatic organisms from both point and non-point source pollution.

3.6.1.2 Biostimulatory Substances: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

3.6.1.3 Bottom Substrate: Suitable substrate particle size distributions shall be maintained to insure successful fish spawning as well as attachment of macroinvertebrates and algal components.

3.6.1.4 Color: Waters shall be free of unnatural coloration, which causes nuisance or impairs the designated beneficial uses.

3.6.1.5 Dioxins: Dioxins are known to be some of the most toxic manmade compounds known. Recent research has indicated that these compounds may be several orders of magnitude more toxic than was originally indicated (EPA 1985). Criteria established for such compounds are likely to be below the levels one could reasonably expect to be able to detect. No dioxin compounds will be discharged to any water within the reservation boundaries.

3.6.1.6 Floating Material: Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.

3.6.1.7 Nitrate: Levels of Nitrates in waters with municipal or domestic supply use shall not exceed 10 mg/l. In other bodies of water the levels of nitrate shall not be increased by human related activity above the levels consistent with preservation of the specified beneficial uses.

3.6.1.8 Nitrite: Levels of nitrites shall not be increased, in any body of water, by human related activity above the levels consistent with preservation of the specified beneficial use corresponding to that water body.

3.6.1.9 Oil and Grease: Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses.

3.6.1.10 Pentachlorophenol: No discharge of pentachlophenol will be allowed to any water body within the boundaries of the reservation. Any existing point or non-point source causing increased levels of PCP shall be addressed as a noncompliance condition under the antidegradation plan.

3.6.1.11 Petroleum Hydrocarbons: No increase above background levels of petroleum hydrocarbons will be allowed due to human related activity in any water body within the reservation boundaries.

3.6.1.12 Pesticides: No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. There shall be no bioaccumulation in pesticide concentrations found in bottom sediments or aquatic life. Waters designated for use, as domestic or municipal supply shall not contain concentrations of pesticides in excess of the limiting conditions set forth in Appendix F. Any existing point or non-point source causing increased levels of pesticides shall be addressed as a noncompliance condition under the antidegradation plan.

3.6.1.13 Phosphates: In order to preserve the existing quality of water within the reservation boundaries from existing and to avoid potential eutrophication of phosphorous in any water body shall not be increased by human related activity above levels consistent with preservation of the specified beneficial uses.

3.6.1.14 Radioactivity: Radionuclides shall not be present in concentrations which are deleterious to human, plant, animal or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal or indigenous aquatic life.

3.6.1.15 Sediment: The suspended sediment load and suspended sediment discharge rate of waters shall not be altered in such a manner as to cause impairment or adversely affect beneficial uses.

3.6.1.16 Settable Material: Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or adversely affect beneficial uses.

3.6.1.17 Suspended Material: Waters shall not contain suspended material in concentrations that cause impairment or adversely affect beneficial uses.

3.6.1.18 Tastes and Odors: Waters shall not contain taste or odor producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance or adversely affect beneficial uses.

3.6.1.19 Tetrachlorophenol: No discharge of tetrachlorophenol will be allowed to any water body within the boundaries of the reservation. Any existing point or non-point source causing increased levels of TCP shall be addressed as a non-compliant condition under the antidegradation plan.

3.6.1.20 Total Dissolved Solids: The total dissolved solids shall not exceed 100.0 mg/l unless specifically authorized by the Riparian Review Committee upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses specified in this document.

3.6.1.21 Toxicity: All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances. Compliance with this objective will be determined by analysis of indicator organisms, species diversity, population density, growth anomalies, biotoxicity tests of appropriate duration, or other methods as specified by the Riparian Review Committee.

i. The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable pollution factors, shall not be less than that for the same water body in areas unaffected by the waste discharge. For other control water bodies the requirements for "experimental water" are described in Methods for Measuring Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, latest edition, and Short-Term Methods For Estimating The Chronic Toxicity of Effluents And Receiving Water To Freshwater Organisms, latest edition.

ii. Effluent limits based upon acute bioassay of effluent will be prescribed where appropriate. Additional numerical receiving water standards for specific toxicants will be established as sufficient data become available. Source control of toxic substances will be encouraged [...]

3.6.3 Wetlands – Determination of wetland jurisdiction and wetland delineation will be made in accordance with the protocols outlined in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (Interagency Cooperative Publication, January 1989). The Riparian Review Committee or their respective department representatives will be responsible for wetland determination. There shall be no net loss of wetlands on the Hoopa Valley Indian Reservation. This means that no activity shall convert a wetland to non-wetland status when a feasible alternative exists. If no feasible alternative exists, then a wetland of equal or greater size must be constructed or rehabilitated in another area (preferably within the same watershed) as mitigation. When water is present at the surface or extracted from the subsurface in a wetland, the above criteria for surface and groundwater applies. Vegetation removal within wetlands shall be avoided where a feasible alternative exists. If no feasible alternative exists, the wetland is to be replanted or expanded to mitigate for the area where vegetation has been removed. Dumping waste of any kind is prohibited in wetlands. Dumping in wetlands will be considered a Class II Moderate violation

Antidegradation – no wetland-specific language

Wetland Definition – 40 CFR §116.3

Wetlands (Part of 1.6 Water Resources and Water Use) – *Identified reservation wetlands using GIS and aerial imagery, will delineate boundaries if there is a project on them. Catalog three wetland types including dominant plant species.*

Upland Riparian and Wet Brushfield – The riparian corridors occur along most of the perennial drainages, and are characterized by dense canopy and moderately diverse hydrophytic vegetation. Approximately 200 miles of riparian corridor were delineated from photographs for tributaries to the Trinity and Klamath Rivers, in addition to 19 miles associated with the Trinity River itself.

Upland Herb Meadows – The upland meadows are mostly associated with dioritic soils at higher elevation in the southeast corner of the Reservation, and are representative of the highly developed wet meadow complex that occurs farther east in the vicinity of Trinity Summit. Meadows are normally of low gradient, with diverse vegetation dominated by various sedge, rush, grass and herb species. Steeper portions of the meadows are often covered with dense brushfield.

Valley Floor Riparian – Riparian vegetation on the valley floor is similar to upland riparian, but due to past disturbance (filling, channelization) is often dominated by exotic species.

Other Wetlands on the Valley Floor – The majority of wetlands on the valley floor, excluding riparian, are located on poorly drained flat areas adjacent to drainages. The relatively stagnant "swamp" is characterized by native species such as black cottonwood, red alder, water parsley, juncus, horsetail, and other hydrophytic or aquatic species. As with riparian vegetation in the valley, these areas have been subject to intense invasion by the three exotic species noted above. Other minor wetland types present in the valley include a small amount of cattail marsh, and an aquatic forb community present in horse pasture.

Waterbody Identification - A waterbody that is not listed but that is a tributary to a listed waterbody is protected by the water quality standards that have been established for the nearest downstream waterbody. Water bodies within the Reservation, which do not have beneficial uses designated for them are assigned wildlife and/or aquatic habitat, or recreation designations. These designations in no way affect the presence or absence of other beneficial use designations in these water bodies. Further classification will be based on the size of the waterbody and its historic and environmental significance. Water bodies which are used for Domestic water, fisheries, or cultural purposes have the highest priority for protection and restoration.

3.3.6 is the schedule for designating uses on a waterway by waterway based from the Trinity River through tributary creeks

Water Quantity and Quality Problems (1.12) – In addition to further reductions in Trinity River stream flows, the Hoopa Valley Tribe faces difficult management decisions with respect to on-reservation water use conflicts and water quality problems. As the demand for water diversion from streams within the Reservation increases, it will become difficult to avoid impacts to aquatic resources including salmon and steelhead. Water quality in wells providing domestic water must be protected against groundwater pollutants deriving from septic tanks, pesticides, leaking underground fuel tanks and industrial wastes. Timber harvest activities if not adequately managed can contribute unacceptably large amounts of suspended sediment to streams, which can degrade habitat for salmon and steelhead.

[...]Efforts to divert additional quantities of water are expected to continue despite the clear history of serious environmental consequences.

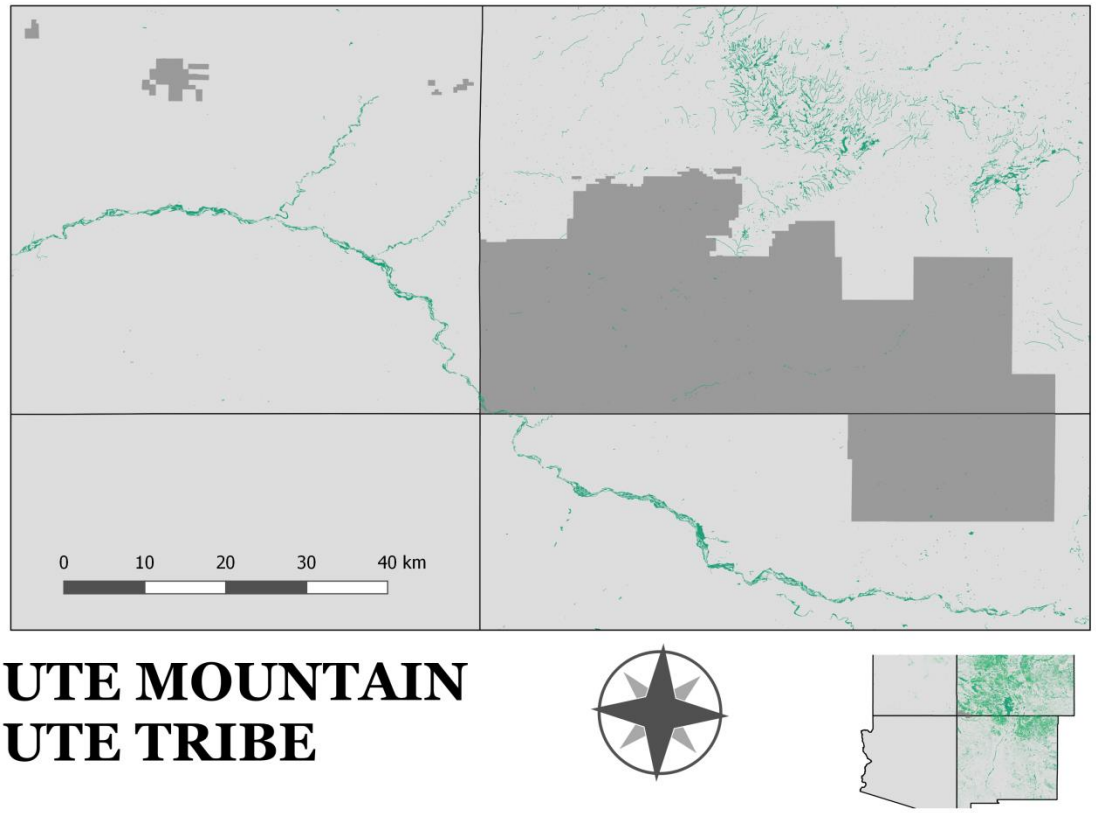
[...]In summary, maximum water demand during summer months occurs when availability of treated water is low.

Non-consumptive water uses – (2.0 Beneficial Uses) Specifically, there has been a marked increase over the last several years in concern over some of the non-consumptive uses that water can serve, notably the growing importance given to the habitat for anadromous fish, principally Chinook salmon, Coho salmon and Steelhead trout. More interest is also being shown in the benefit of water-orientated recreational activities. Other nonconsumptive beneficial uses of growing concern include cultural uses, wildlife habitat, esthetics, wild rivers, and special Native American fisheries.

**Similar to Northern California Regional Water Quality Board Plan*

Ute Mountain Ute Tribe (CO, NM, UT)

Most of the Ute Mountain Ute Tribe reservation is located in southwestern Colorado with portions in Utah and New Mexico. Water Quality Standards for Wetlands section says that wetlands are tribal waters subject to narrative criteria and antidegradation, and classified wetlands (with uses) are subject to narrative and numeric criteria. Some wetlands are further classified as ephemeral or intermittent.



The Ute Mountain Ute Tribe has 581 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Table 12.1 Designated Uses for Tribal Waters, Colorado and New Mexico [*Middle San Juan + tributaries and wetlands*]

WWAL - Waters that support warm water species of aquatic life, including associated benthic macroinvertebrate communities, that can survive temperatures greater than 20 degrees C for extended periods of time.

AG - Waters that are used for agricultural purposes such as irrigation and livestock watering.

REC1 - Waters that are, or may be, used for recreation such as swimming and boating, during which it is expected that small quantities of water may be ingested.REC1

Narrative Standard – 5. Narrative Water Quality Criteria

a. All Reservation surface waters shall be free from substances, from any pollution source, that:

(1) Settle to form objectionable deposits;

(2) Float as debris, scum, oil, or other matter forming nuisances;

(3) Produce objectionable color, odor, taste, or turbidity;

(4) Cause injury to, or are toxic to, or produce adverse physiological responses in humans, animals, or plants; or

(5) Produce undesirable or nuisance aquatic life.

b. For substances that lack numeric water quality criteria or for which numeric criteria are not protective or representative of clean water goals, these narrative water quality criteria shall be implemented. Implementation of these narrative criteria shall take into consideration appropriate EPA technical guidance concerning the development of water quality based controls. For example, narrative water quality criteria shall be implemented considering any criteria guidance issued by EPA under CWA Section 304(a), and other relevant, technically-defensible criteria for pollutants of concern may also be considered. Any Safe Drinking Water Act provisions and health advisories will be considered for implementation of these criteria for substances that lack numeric criteria for public water supply use. For purposes of point source discharges 5.a.(4) shall be implemented by including appropriate Whole Effluent Toxicity (WET) limitations in the NPDES permit, as specified in the latest edition of the document "Region 8 NPDES Whole Effluent Toxicity Program Document".

6. Narrative Biological Criterion The overall goal of the biological criterion of the Tribe is to maintain and support the structure and function of aquatic communities in conditions similar to reference sites or reference conditions that are determined by the Tribe. Assessment of biological conditions will include monitoring of the benthic macroinvertebrates, fish, and/or plant communities, as appropriate. Community metrics will be determined by the Tribe, relative to reference sites. A reference condition may be assigned as a goal for the biological community if there is an insufficient number of reference sites or if those sites become impaired. Data for a reference condition will be treated in the same manner as if it were a reference site.

Narrative Biological Criteria – Implementation of narrative biological criterion:

The intent of the Tribe in adopting a narrative biological criterion is primarily to provide an additional assessment method for the identification of impaired waters. The Tribe recognizes an inherent difference between biological criteria and numeric chemical-specific criteria. A major difference is the manner in which the two types of criteria can be applied effectively in determining water quality based effluent limits for point source discharges. Chemical-specific criteria typically are expressed as a concentration of a given parameter, with provisions that describe an averaging period and an allowable frequency of exceedance. Biological criteria describe a desired biological condition, and are expressed and interpreted using information about aquatic organisms. Biological criteria, therefore, are not ideally suited for directly calculating effluent limits for point source discharges. The Tribe does believe that biological criteria are useful because there can be physical and biological changes in aquatic ecosystems that may impair a water's health that are unrelated to chemical constituents in the water column.

8. Water Quality Standards for Wetlands

The Tribe recognizes that the natural water quality of wetlands may differ from that of associated streams. Existing water quality, uses and functions of wetlands will be protected.

a. For wetlands specifically listed in Section 11. Use Designations, designated uses cited in that section and numeric criteria assigned to those uses will apply. Those wetlands will also be subject to narrative criteria, antidegradation provisions, and the narrative biological criteria of the Tribe.

b. Wetlands not specifically listed in Section 11. are considered to be "Tribal waters," and will be subject to narrative criteria, applicable antidegradation provisions, and the narrative biological criteria of the Tribe. It shall also be a goal of the Tribe to maintain the water quality of wetlands at naturally occurring levels, within the natural range of variability for the individual wetland.

c. Wetlands that are seasonally dry shall be considered to be "ephemeral waters" or "intermittent waters," or both.

d. Wetlands shall not be considered as repositories or treatment systems for wastes from human sources.

e. Constructed wetlands are those that are specifically designed for the purpose of wastewater or storm water treatment, and those are not considered "Tribal waters."

9. Ephemeral Waters and Intermittent Waters

a. Ephemeral waters shall be required to meet the criteria established to support existing and designated uses when there is an existing surface stream flow from any source, however minimal. All stream segments of intermittent waters shall meet the criteria established for segments of that water body that have a stream flow, however minimal.

b. Ephemeral waters that receive a continuous discharge that enhances habitat by causing a perennial flow shall be protected in the same manner as other perennial waters. In these cases, designated uses and criteria shall be evaluated for revision to a more stringent standard, unless a Use Attainability Analysis has been performed and approved by the Tribe and the U.S. Environmental Protection Agency, Region VIII.

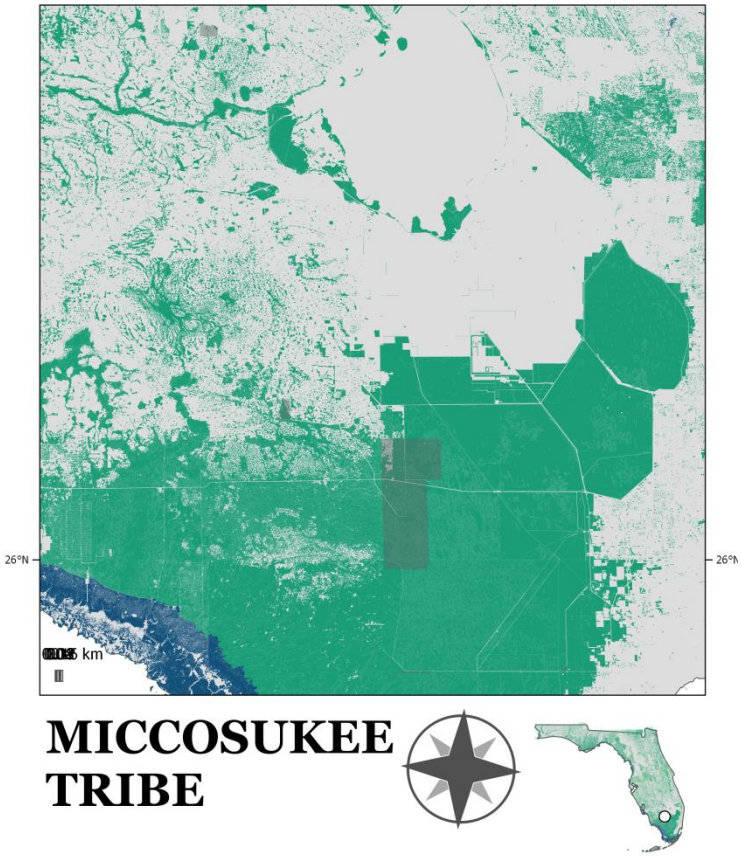
Antidegradation – no wetland-specific language

Wetland Definition – 40 CFR §116.3, specifies that wetlands are Tribal Waters.

Authority - *Introduction specifies major rivers by name as well as all tributaries, lakes, reservoirs and wetlands.*

Miccosukee Tribe (FL)

The Miccosukee Tribe reservation is located in Florida. The code specifies that violations of dissolved oxygen criteria caused by nuisance algae blooms are a violation of the narrative standard. Class III-A is designed to preserve the natural Everglades ecosystem, including native plants. The narrative phosphorus translator is 10 parts per billion for Class III-A waters.



The Miccosukee Tribe Reservations have 79,596 acres of wetlands (in green) according to the National Wetland Inventory .

Designated Uses – Section 4. Classification of Tribal Water Bodies: [*guessing this is wetlands/Everglades specific]*

> Class III-A Waters: Those Tribal water bodies which are used for fishing, frogging, recreation (including airboating), and the propagation and maintenance of a healthy, well-balanced population of fish and other aquatic life and wildlife. These waters have been primarily designated for preservation of native plants and animals of the natural Everglades ecosystem.

Narrative Standard – Section 3. Tribal Water Quality Standards

> A. Sediment Deposits: All Tribal surface waters shall be free from water contaminants, from other than natural causes, that may settle and have a deleterious effect on the aquatic biota or that will significantly alter the physical, chemical and biological properties of the water or the bottom sediments.
>
> B. Floating Solids, Oil and Grease: All Tribal surface waters shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes (including visible films of oil, globules of oil, grease, or solids in or on the water, or coatings on stream banks or vegetation). Oil and grease discharged into surface waters shall not exceed 5.0 mg/liter.

C. Color: All Tribal surface waters shall be free from true color producing materials, from other than natural causes, that create an aesthetically undesirable condition. Neither true color nor apparent color shall impair the designated and other attainable uses of a water body. Apparent color producing substances from other than natural sources are limited to concentrations equivalent to 70 color units (CU) on the Platinum - Cobalt Scale for domestic wastewater discharges.

D. Odor and Taste: All Tribal surface waters shall be free from contaminants, from other than natural causes, are limited to concentrations that do not impart unpalatable flavor to fish, and that do not result in offensive odor or taste arising from the water, and that do not otherwise interfere with the designated and other attainable uses of a water body. Taste and odor-producing substances from other than natural origins shall not interfere with the production of a potable water supply by modem treatment methods. The Tribe hereby adopts the Organoleptic Criteria in Table 2.

E. Nuisance Conditions: Plant nutrients or other substances stimulating algal growth, from other than natural causes, shall not be present in concentrations that produce objectionable algal densities or nuisance aquatic vegetation, or that result in a dominance of nuisance species instream, or that cause nuisance conditions in any other fashion. Phosphorus and nitrogen concentrations shall not be permitted to reach levels which result in man-induced eutrophication problems. Total phosphorus shall not exceed 10 parts per billion in Class III-A waters. In Class III-B waters, total phosphorous discharges shall not be made which result in undesirable aquatic life effects or which result in chronic or acute toxicity to aquatic life.

F. Pathogens: All tribal surface waters shall be virtually free from pathogens. Waters used for irrigation shall be virtually free of Salmonella and Shigella species.

G. Turbidity: Turbidity in Class I and III-A waters shall not reduce light transmission to a point where aquatic biota are inhibited or alter color or natural appearance of the water, and in no instance shall the turbidity exceed 29 NTU above natural background conditions at any place or at any time. Turbidity shall not reduce light transmission to a point where aquatic biota are inhibited or alter color or natural appearance of the water. In Class III-B waters. turbidity shall not be discharged which result in undesirable aquatic life effects or which result in chronic or acute toxicity to aquatic life.

H. Temperature: All surface waters of the Tribe shall at all places and at all times be free from domestic, industrial, agricultural or other man-induced non-thermal components of discharges which, alone or in combination with other components of discharges produce conditions so as to create a nuisance or cause the introduction of heat [...] The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. In no case shall man-induced heat be permitted when the maximum temperature specified for the water body would thereby be exceeded. [...]

I. Salinity /Dissolved Solids /Chlorides: Existing mineral quality shall not be altered by municipal, industrial, agricultural, or other waste activities so as to interfere with the attainable uses for a water body. An increase of more than 10% over naturally occurring levels shall not be permitted. Normal daily & seasonal fluctuations shall be maintained.

J. pH: The pH of all Tribal surface waters shall not be permitted to fluctuate in excess of 1.0 unit over a period of 24 hours for other than natural causes. pH shall not be less than 6.5 nor greater than 9.0 in order to fully protect aquatic life.

K. Dissolved Oxygen: The Dissolved Oxygen standard for Class I and Class III-A waters is a minimum of 5.0 mg/liter. In waters which are designated as Class III-B, dissolved oxygen must be maintained at levels which will support indigenous aquatic life. Dissolved Oxygen levels that are attributable to natural background conditions may be established as alternative dissolved oxygen criteria for a water body or portion of a water body. Daily and seasonal fluctuations in dissolved oxygen levels shall be maintained. Normal diurnal fluctuations in dissolved oxygen which are attributable to the natural processes of photosynthesis shall not be deemed a violation of this standard. Man-induced nutrient eutrophication occurring in Class I and III-A surface waters contributing to increased algal growth and resulting in less than 5.0 mg/liter of dissolved oxygen in the water is a violation of this standard.

L. Bacteriological Quality: The density of Escherichia coli colony forming units (cfu) shall not exceed a geometric mean density of 126 cfu per 100 milliliters, nor exceed the single sample maximum

allowable density of 576 cfu per 100 milliliters which is based on the infrequent use of all Tribal surface waters for bathing. [...]

M. Biological Integrity: The "Shannon-Weaver Diversity Index of Benthic Macroinvertebrates" shall not be reduced to less than 75% of background levels as measured [*procedure to be supplied by US EPA*].

N. Nutrients: In no case shall nutrient concentrations of Tribal Class I or Class III-A surface waters be altered so as to cause an imbalance in natural populations of aquatic flora or fauna. Total phosphorus concentrations shall not exceed 10 parts per billion in Class III-A waters. In Class III -B waters, nutrients shall not be discharged which result in undesirable aquatic life effects or which result in chronic or acute toxicity to aquatic life.

O. Toxic Substances: All Tribal surface waters shall be free from the presence of toxic substances in quantities that are toxic to human, animal, plant, or aquatic life, or in quantities that interfere with the normal propagation, growth, and survival of sensitive aquatic biota. All surface waters of the Tribe shall at all places be free from any substance, in any concentration, which is carcinogenic, mutagenic, or teratogenic to human beings or to significant, locally occurring, wildlife or aquatic species. Within the mixing zone, there shall be no acute toxicity. There shall be no chronic toxicity at the edge of the mixing zone. For toxic substances lacking EPA published criteria [...]

Antidegradation – resources such as waters of parks and wildlife refuges and water of exceptional ecological and recreational significance [...] are Tier 3 Outstanding Natural Resource Waters [*different from Tier 2 ¾ Outstanding Miccosukee Waters*]

Wetland Definition – 40 CFR §116.3

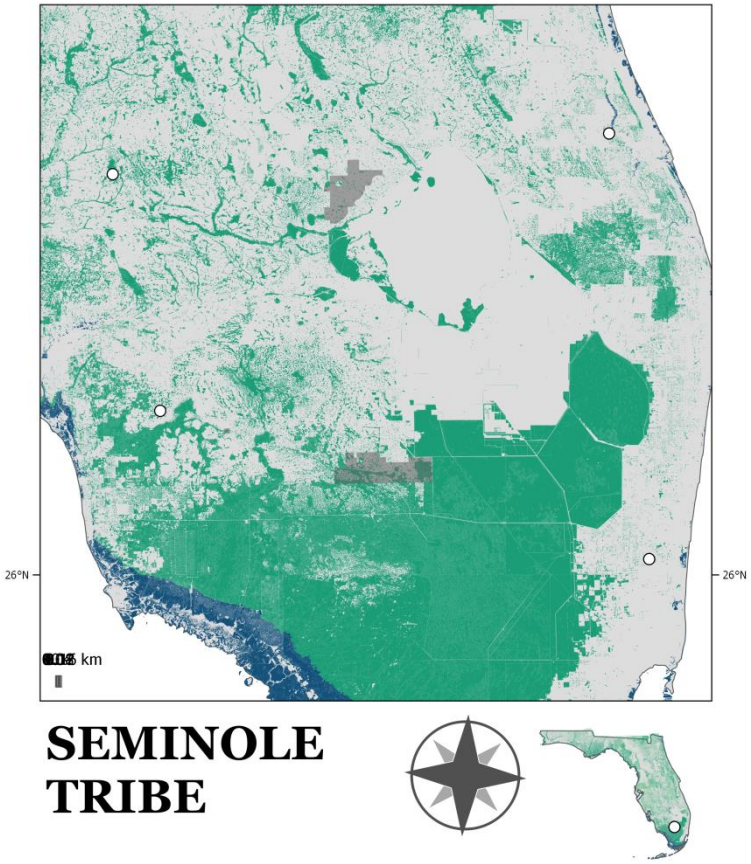
Definitions –

Nuisance Condition. A condition involving uncontrolled growth of aquatic plants, usually caused by excessive nutrients in the water. Nuisance Species shall mean species of flora or fauna whose noxious characteristics or presence in sufficient number, biomass, or aerial extent may reasonably be expected to prevent, or unreasonably interfere with, a designated use of those waters.

**Include a definition of Waters of the United States instead of Tribal or Reservation Waters*

Seminole Tribe (FL)

The Seminole Tribe reservations are located in southern Florida. Wetlands are waters of the state and the default class of all waters is Class 2b (fisheries and wildlife). Isolated wetlands are Class 2c (nutrient-tolerant fish and wildlife) along with Water Resource Areas and artificial conveyances.



The Seminole Tribe reservations have 27,509 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section 12.2 Designated Uses:

Class 2. Protection, propagation and harvesting of fish and wildlife; maintenance of a well-balanced population of fish and wildlife; recreation in and on the water. Class 2 waters are further classified according to the sub-classes listed in paragraph (2) below.

Sub-class 2-8. General Purpose Class 2. Protection, propagation and harvesting of fish and wildlife; maintenance of a well-balanced population of fish and wildlife; recreation in and on the water.

Sub-class 2-C. Artificial Conveyances; Water Resource Areas, Irrigation Cells and Pasture Runoff Collection and Transportation Systems. Protection, propagation and harvesting of fish and wildlife that is tolerant of nutrients and other pollutants.

(b) Classification of Reservation Surface Waters. Except as otherwise provided in this section, all Reservation surface waters on the Big Cypress and Brighton Reservations are designated Class 2-B. All canals managed by the South Florida Water Management District are also expressly designated Class 2-B, unless specifically designated Class 2-C below.

(3) Class 2-C -- Water Resource Areas and Irrigation Cells. Big Cypress Reservation Water resource areas and irrigation cells (defined in Section 11.5 and components of the Tribe's Water

Conservation System Conceptual Plan for the Big Cypress Reservation) are designated Class 2-C. Additionally, isolated wetlands that are not components of the Conceptual Plan are also designated Class 2-C.

Narrative Standard – Section 12.3 Water Quality Criteria

(a) Narrative Standards for All Reservation Surface Waters. All Reservation surface waters, including those within mixing zones, shall be free from substances attributable to wastewater discharges or other pollutant sources that:

(1) Settle to form objectionable deposits;

(2) Float as debris, scum, oil, or other matter forming nuisances;

(3) Produce objectionable color, odor, taste, or turbidity;

(4) Cause injury to, or are chronically toxic to, or produce adverse physiological responses in humans, wildlife, plants or fish and other aquatic life; or

(5) Are unsuitable for aquatic life propagation and maintenance and, where attainable, support balanced indigenous populations of aquatic life.

Antidegradation – Outstanding National Resource Waters include waters in national and state parks and swamps.

Definitions – The term Outstanding National Resource Waters (ONRW) means high-quality or ecologically unique waters, such as those within the jurisdiction of National and State parks and wildlife refuges including swamps or hot springs. The primary intent of establishing ONRWs is to protect waters having special environmental, cultural or recreational attributes

The term water resource area means a feature that has been designed as a component of the Tribe's Water Conservation System Conceptual Plan on the Big Cypress Reservation for the dual purposes of: (1) removal/assimilation of nutrients, especially phosphorus, in water that has been used for agricultural purposes; and (2) storage of water for agricultural uses.

Wetland Definition – 40 CFR §116.3

Applicability – This Chapter applies to all surface waters, including wetlands, within the exterior boundaries of the Tribe's Big Cypress and Brighton Reservations.

**Numeric criteria tables have several narrative criteria, including color, alkalinity, etc.*

Coeur d'Alene Tribe (ID)

The Coeur d'Alene Reservation is located in northern Idaho. The tribe does not have a wetland-specific uses. All unclassified waters support aquatic life, ceremonial, and industrial uses; all waters support aesthetics and wildlife uses. The code includes provisions for disputed waters. Where the boundary between water body classes is indiscernible (wetlands to lakes) the criteria of the class experiencing impacts apply. Narrative standard applies to wetlands, wetlands should not receive stormwater or point source discharges.

The Coeur d'Alene Reservation has 5,472 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – 18. Water Use Classification

(3) Recreational and Cultural Water Uses. Surface waters which are suitable or intended to become suitable for prolonged intimate contact by humans or for activities where the ingestion of small quantities of water is likely to occur. Such waters include, but are not restricted to, those used for swimming, wading, fishing, boating, or for ceremonial or cultural purposes.

(4) Aquatic Life Uses

20. General Classifications - All Reservation TAS Waters shall be designated, at a minimum, for the protection of Bull Trout and Cutthroat Trout and for recreational and cultural uses, unless a Use Attainability Analysis has first been performed in accordance with water quality standards regulations at 40 CFR 131.1 O(g). All surface waters not specifically classified in Section 21 shall be designated for aquatic life uses and for recreational and cultural uses. Unclassified Reservation T AS Waters must be of sufficient quality to ensure that downstream uses are fully protected. All Reservation TAS Waters shall be designated for the uses of industrial water supply, aesthetics, and wildlife habitat. Water quality criteria for those uses will be generally satisfied by implementation of the General Conditions in Section 3, and the Narrative Criteria in Section 5.

Narrative Standard – 5. Narrative Criteria

(1) Floating Solids, Oil and Grease: All waters shall be free from visible oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from anthropogenic causes.

(2) Color: True color-producing materials resulting from anthropogenic causes shall not create an aesthetically undesirable condition; nor should color inhibit photosynthesis or otherwise impair the existing and designated uses of the water.

(3) Odor and Taste: Water contaminants from anthropogenic causes shall be limited to concentrations that will not impart unpalatable flavor to fish, or result in offensive odor or taste arising from the water, or otherwise interfere with the existing and designated uses of the water.

(4) Nuisance Conditions: Nutrients or other substances from anthropogenic causes shall not be present in concentrations which will produce objectionable algal densities or nuisance aquatic vegetation, result in a dominance of nuisance species, or otherwise cause nuisance conditions.

(5) Turbidity: Turbidity shall not be at a level to impair designated uses or aquatic biota.

(6) Bottom Deposits: All Reservation TAS Waters shall be free from anthropogenic contaminants that may settle and have a deleterious effect on the aquatic biota or that will significantly alter the physical and chemical properties of the water or the bottom sediments.

7. Toxic Substances (1) Toxic substances shall not be introduced into Reservation TAS Waters in concentrations which have the potential either singularly or cumulatively to adversely affect existing and designated water uses, cause acute or chronic toxicity to the most sensitive biota dependent upon those waters, or adversely affect public health, as determined by the Department, except as allowed for under Mixing Zones.

Antidegradation – no wetland specific rules, outstanding resource waters criteria: outstanding resource, critical habitat for threatened or endangered species, waters of exceptional recreational, ceremonial, cultural, or ecological significance; waters supporting priority species.

Wetland Definition – very close to 40 CFR §116.3

Definitions –

"Critical condition" is when the physical, chemical, and biological characteristics of the receiving water environment interact with the effluent to produce the greatest potential adverse impact on aquatic biota and existing or characteristic water uses.

"Cultural water use means those water uses necessary to support and maintain the way of life of the Coeur d'Alene People including, but not limited to: use for sufficient flow for fish survival, and wildlife needs, and preservation of habitat for berries, roots, medicines and other vegetation significant to the values of the Coeur d'Alene People. Cultural water uses also include ceremonial activities involving Native American spiritual and cultural practices which may involve intimate contact with water and consumption of water. This shall include uses of a waterbody to fulfill cultural, traditional, spiritual, or religious needs of the Coeur d'Alene Tribe, as approved by the Coeur d'Alene Tribe.

"Damage to the ecosystem" means any demonstrated or predicted stress to aquatic or terrestrial organisms or communities of organisms which the Department concludes may interfere with the health or survival success or natural structure and functioning of such populations. This stress may be due to alteration in habitat or changes in water temperature, chemistry, or turbidity, or other causes. In making a determination regarding ecosystem damage, the Department shall consider the cumulative effects of pollutants or incremental changes in habitat that may create stress over the long term.

"Disputed Waters" means all navigable waters within the exterior boundaries of the 1873 Coeur d 'Alene Reservation over which the Coeur d'Alene Tribe maintains claims to jurisdiction..

General Conditions

(1) All Reservation TAS Waters shall be free from pollutants in concentrations or combinations that do not protect the most sensitive use of the water body, except as provided for under Mixing Zones (section 12).

(2) Whenever the natural conditions of Reservation TAS Waters are of a lower quality than the criteria assigned, the Department may determine that the natural conditions shall constitute the water quality criteria, following the procedures set forth in Section 4.

(3) At the boundary between waters of different classifications, the more stringent water quality criteria shall prevail. When a distinction cannot be made among surface water, wetlands, groundwater, or sediments, the applicable standards shall depend on which existing or designated use is, or could be, adversely affected. If existing or beneficial uses of more than one resource are affected, the most protective criteria shall apply.

(4) The Department may revise criteria on an area-wide or waterbody-specific basis as needed to protect aquatic life and human health and other existing and designated uses and to increase the technical accuracy of the criteria being applied. The Department shall formally adopt any revised criteria following public review and comment.

(5) In aquatic habitats where more than one designated use exists, the most stringent use standards will apply.

11. Wetlands

(1) All wetlands which are considered Reservation TAS Waters, and which are not constructed wetlands, shall be subject to the Narrative C1iteria (section 5), Antidegradation (section 6), and Narrative Toxic Substances Criterion (section 7(1)) provisions within this chapter.

(2) Water quality in wetlands which are considered Reservation TAS Waters shall be maintained at naturally occurring levels, within the natural range of variation for the individual wetland.

(3) Physical and biological characteristics shall be maintained and protected by:

(a) Maintaining hydrological conditions, including hydroperiod, hydrodynamics, and natural water temperature variations;

(b) Maintaining the natural hydrophytic vegetation; and

(c) Maintaining substrate characteristics necessary to support existing and designated uses.

(4) Wetlands shall not be used in lieu of stormwater treatment, except as specified by number 7, below. Stormwater shall be treated before discharge to a wetland.

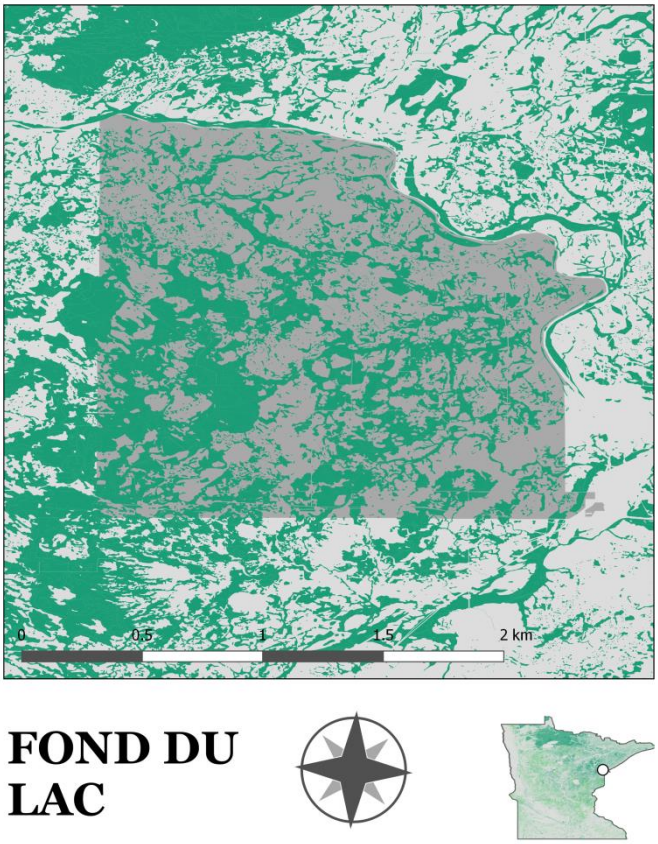
(5) Point and nonpoint sources of pollution shall not cause destruction or impairment of wetlands except where authorized under section 404 of the CWA.

(6) Wetlands shall not be used as repositories or treatment systems for wastes from human sources, except as specified by number 7, below.

(7) Wetlands intentionally created from non-wetland sites for the sole purpose of wastewater or storm water treatment (constructed wetlands) are not considered "Reservation TAS Waters" and are not subject to the provisions of this section.

Fond du Lac Band of Lake Superior Chippewa (MN)

The reservation of the Fond du Lac Band of Lake Superior Chippewa is located in northern Minnesota. The aesthetic designated use applies to wetlands and most aquatic life, recreation, and cultural uses apply to wetlands, which may be similar to GSL impounded wetlands. Antidegradation policy lists wetlands as high quality waters. Wild rice use is likely a wetland-specific use because wild rice is an obligate wetland species.



The Fond du Lac Reservation has 45,798 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section 302 – Standards of Designated Use

B Wildlife: All surface waters capable of providing a water supply, vegetative habitat and prey for the support and propagation of wildlife located within the Fond du Lac Reservation.

C2. Warm water fisheries: A stream, reach, lake or impoundment where water temperature, habitat and other characteristics are suitable for support and propagation of warm water fish and other aquatic life, or serving as a spawning or nursery area for warm water fish species. Examples of warm water fish species include largemouth bass and bluegills.

D2. Secondary contact recreational: The recreational use of a stream, reach, lake or impoundment in which contact with the water may, but need not, occur and in which the probability of ingesting water is minimal.

E1. [*Cultural*] Wild rice areas: A stream, reach, lake or impoundment, or portion thereof, presently historically or with the potential to be vegetated with wild rice.

E2. [*Cultural*]Aesthetic waters: A stream, reach, lake or impoundment which has been determined by the Reservation Business Committee to possess exceptional beauty or be significant to the

preservation or exercise of the traditional value system of the Fond du Lac Band of Lake Superior Chippewa, which may include but is not limited to primary (direct) contact with water or the preservation of wetlands for the maintenance of traditional medicinal plants.

Narrative Standard – Section 301 – General Standards

a. Reservation waters shall be free from suspended and submerged solids or other substances that enter the waters as a result of human activity and that will settle in the bed of a body of water or be deposited upon the shore of that body of water to form putrescent or otherwise objectionable deposits, or that will adversely affect aquatic life.

b. Reservation waters shall be free from floating debris, oil, scum and other floating materials entering the waters as a result of human activity in amounts sufficient to be unsightly or cause degradation.

c . Reservation waters shall be free from material entering the waters as a result of human activity producing color, odor, taste or other conditions in such a degree as to create a nuisance.

d . Reservation waters shall be free from nutrients (nitrogen and phosphorus) entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae.

e . Reservation waters shall be free from substances entering the waters as a result of human activity in concentrations that are toxic.

f. The pH of a stream, lake or reservoir shall not be permitted to fluctuate in excess of 1.0 unit over a period of twenty-four (24) hours for other than natural causes.

g. If a stream or lake is capable of supporting aquatic life, the dissolved oxygen standard will be a daily minimum of 5 mg/l for other than natural causes. For waters designated as cold water fisheries, the dissolved oxygen criterion will be a daily minimum of 8 mg/l to Protect early life stages of cold water fish (enabling a required intergravel dissolved oxygen concentration of 5 mg/l) . This criterion applies only when and where these early life stages occur.

h. Settleable and suspended solids (turbidity) should not reduce the depth of the compensation point for photosynthetic activity by more than 10 percent from the seasonally established norm for aquatic life.

i. Concentrations of radioactive materials shall not exceed concentration caused by naturally occurring materials.

j. Existing mineral municipal, quality shall not be altered by industrial and in-stream activities or other waste discharges so as to interfere with the designated uses for a water body.

k. The introduction of heat by other than natural causes shall not increase the temperature of Reservation waters by more than three degrees Fahrenheit from ambient temperatures for Reservation lakes, and five degrees Fahrenhei.t from ambient temperatures for Reservation streams above that which existed before the addition of heat, based upon the monthly average of daily maximum temperature.

l. All naturally occurring biological communities and the habitat needed to support them, as determined by sampling, data analysis and establishment of reference conditions shall be maintained and protected in all waterways and wetlands of the Reservation.

m. Any lake or stream which supports wild rice growth shall not exceed instantaneous maximum sulfate levels of 10 milligrams per liter.

Antidegradation – 2 . Waters in which the existing quality surpasses, on a pollutant by pollutant basis, the standards prescribed under this Ordinance, and unequivocally attains those levels necessary to support maintain existing water uses, and habitats, aquatic and wetland water, and wildlife and recreation in and on the of are considered high quality for the purposes this antidegradation policy and implementation procedures.

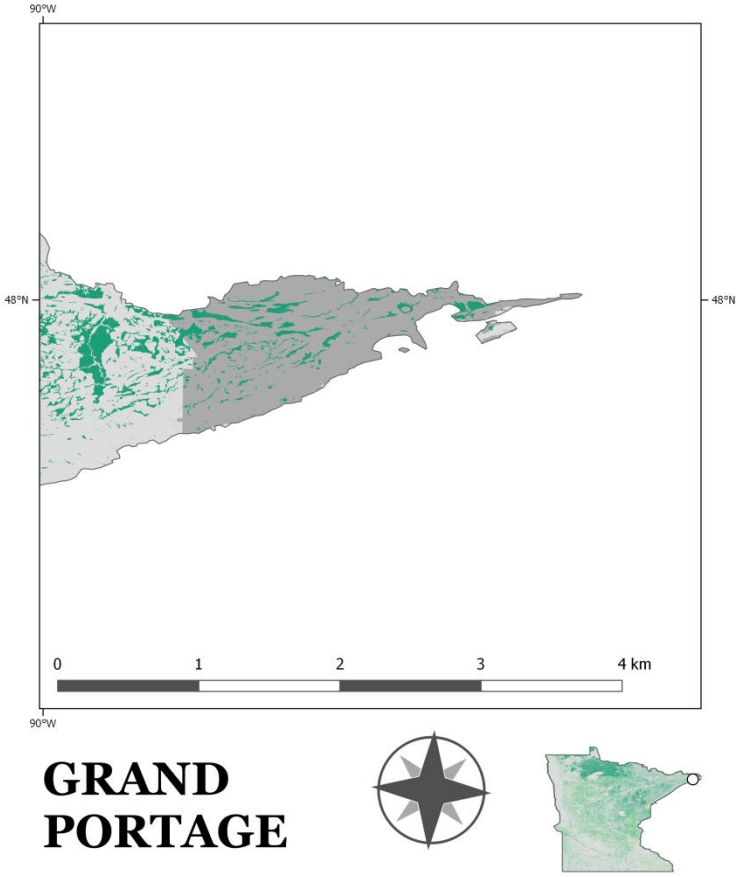
Wetland Definition – none

Scope – Section 103. The water quality standards established under this Ordinance shall apply to all waters of the Fond du Lac Reservation, including wetlands.

**Extensive mention of impoundments, which appear to be similar to GSL impounded wetlands. Recreation, wildlife, aquatic life, and cultural uses all apply to impoundments*.

Grand Portage Reservation (MN)

The Grand Portage Reservation is located in northern Minnesota adjacent to Lake Superior. Wetlands are Waters of the Reservation that support a wetland-specific beneficial use (wetland) and wildlife, wild rice, and water supply uses. The recreation designated use lists several types of important regional wetland types (wild rice, meadows, etc.) that standards apply to even though water is not deep enough for swimming.



The Grand Portage Reservation has 5,646 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – V. Designated Uses

B4. Wetland – an area that will be protected and maintained for some of the following uses: maintaining biological diversity, preserving wildlife habitat, providing recreational activities, erosion control, groundwater recharge, low flow augmentation, storm water retention, and prevention of stream sedimentation.

C. Wildlife - All surface waters capable of providing a water supply and vegetative habitat for the support and propagation of all wildlife located within the Grand Portage area.

D3. Inland waters -infrequent use: 1) Remote intermittent streams and streams surrounded by sedge meadows; and 2) inland bogs, wetlands and shallow lakes surrounded by floating sedge and peat mats where swimming is not an existing use due to highly stained waters and deep mucky substrates that create dangerous conditions for swimming.

E1. Wild Rice Areas - a stream, river, lake, wetland or impoundment, or portion thereof, presently, historically or with the potential to be vegetated with wild rice.

E2. Aesthetics - a stream, river, lake, wetland or impoundment, with an uncharacteristic beauty or which represents the traditional value system of the Grand Portage Band of Chippewa, as determined by the Grand Portage Reservation Water Resources Board.

F. Forestry Water Supply – all waters of the Reservation shall be of sufficient quality for use in forestry applications

G. Industrial Water Supply – all waters of the Reservation shall be of sufficient quality to be used as a water supply for commercial processes

H. Navigation – all waters of the Reservation shall be of sufficient quality for use in navigation

Narrative Standard – XI. General Standards – The following general water quality criteria will apply to all waters of the Reservation

1. Waters must be free from suspended and submerged solids or other substances that enter the waters as a result of human activity and that will settle in the bed of a body of water to form foul smelling or otherwise objectionable deposits, or that will adversely affect aquatic life.

2. Waters must be free from floating debris, oil, scum and other floating materials entering the waters as a result of human activity in amounts sufficient to be unsightly, adversely affect uses, or cause degradation.

3. Waters must be free from materials entering the waters as a result of human activity producing color, odor, taste or other conditions in such a degree as to create a nuisance.

4. Nutrient Criteria. B. Narrative Criterion. Waters must be free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae. Nutrient concentrations in surface waters must not be altered so as to cause an imbalance in natural populations of aquatic flora or fauna, or; impair the maintenance or attainment of designated uses.

5. Waters must be free from substances entering the water as a result of human activity in concentrations that are toxic or harmful to human, animal, plant or aquatic life. Toxic substances must not be present in receiving waters in quantities that are toxic to human, animal, plant or aquatic life, or in quantities that interfere with normal propagation, growth and survival of the sensitive aquatic biota.

5.1 Biological Criteria. B. Narrative Criterion. Reservation waters shall be free from substances in concentrations or combinations that would adversely alter the structure and function of aquatic communities, as defined by the un-impacted natural condition. Water quality shall be maintained to support aquatic life designated uses.

6. Waters capable of supporting wild rice will be of sufficient quantity and quality as to permit the propagation and maintenance of a healthy "wild rice" ecosystem in addition to the associated aquatic life and their habitats.

7. The pH of a stream, lake, bay or river will not be permitted to fluctuate in excess of 0.5 units outside the estimated natural seasonal maximum and minimum as defined by Tribal monitoring data.

8. For waters designated as coldwater fisheries, the dissolved oxygen standard will be a minimum daily mean concentration of 9.0 mg/l when and where early life stages of cold water fish occur and 6.0 mg/l for all other coldwater aquatic life stages. For waters designated as warm water fisheries, the dissolved oxygen standard will be a minimum daily mean concentration of 5.5 mg/l when and where early life stages of warmwater fish occur and 5.0 mg/l for all other warmwater aquatic life stages. Where natural conditions alone create dissolved oxygen concentrations less than 110 percent of the applicable criteria means or minima or both, the minimum acceptable concentration is 90 percent of the natural concentration.

9. The pH of a stream, lake, bay or river will not be permitted to fluctuate in excess of 0.5 units outside the estimated natural seasonal maximum and minimum as defined by Tribal monitoring data.

10. Sulfates must not exceed 10 mg/l in wild rice habitats.

11. Bacteria criteria in waters protected for all three categories of primary contact recreational use are based upon EPA' s most recent 2012 bacteria criteria recommendations. Compliance will be based on both the statistical threshold value and a 90-day geometric mean

12. Concentrations of radioactive materials must not exceed concentrations caused by naturally occurring materials.

13. Existing mineral quality will not be altered by municipal, industrial and in-stream activities or other waste discharges so as to interfere with the designated uses for a water body.

14. There will be no material increase in the temperature of Reservation waters other than natural causes, based upon the average of temperatures taken from mid-depth or three (3) feet (whichever is less) for streams and taken from the surface to the bottom or surface to the bottom of the epilimnion if a lake is stratified.

Antidegradation – nothing wetland specific

Wetland Definition – Those areas that have a predominance of hydric soils, are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. "Normal circumstances" refers to the soil and hydrologic conditions normally present, without regard to whether the vegetation has been removed or whether the lands have been otherwise modified/manipulated by human activity.

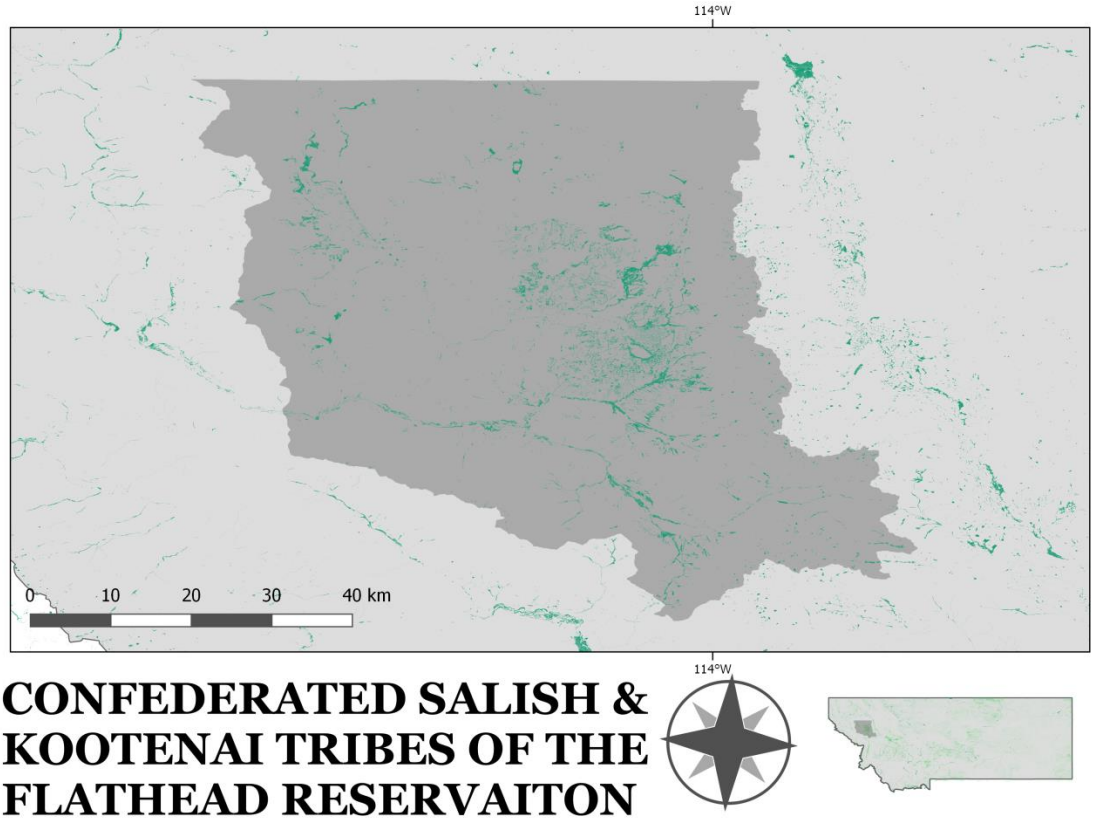
Definitions –Wild Rice Areas: A stream, river, lake, or impoundment, or portion thereof, presently has or historically had the potential to sustain the growth of wild rice (also known as Zizania palustris or manoornin).

III. ***Applicability.*** 1. These standards apply to all waters of the Grand Portage Reservation. Waters of the Grand Portage Reservation are defined as all waters, including wetlands, upon, under, flowing through or bordering upon the Grand Portage Reservation

Biological Criteria Implementation (5.1.C) *list factors for assessing resident aquatic macroinvertebrate community, resident aquatic plant community (species diversity and composition, including algae; and species abundance and condition), and habitat quality*

Confederated Salish and Kootenai Tribes of the Flathead Reservation (MT)

The Flathead Reservation is located in western Montana. Standards cover all surface waters and wetlands. Quality-based classifications recognize that natural water quality in wetlands may differ from streams, but have no criteria differences for streams, lakes, and wetlands and no uses are specific to wetlands. 401 certifications do not allow discharges to wetlands.



The Flathead Reservation has 36,974 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section 1.3.4 Classifications.

A-Closed: Waters classified A-Closed must be maintained suitable for drinking, culinary, and food processing purposes after simple disinfection. Water quality is to be suitable for swimming, bathing, recreation, and wildlife (birds, mammals, amphibians and reptiles), and the growth and propagation of fish and associated aquatic life, although access restrictions to protect public health may limit actual use of A-Closed waters for these uses.

A-1: Waters classified A-1 must be maintained suitable for drinking, culinary, and food processing purposes after conventional treatment for removal of naturally present impurities. Water quality is to be suitable for bathing, swimming and recreation; wildlife (birds, mammals, amphibians and reptiles); the growth and propagation of salmonid fishes and associated aquatic life; and agricultural and industrial water supply purposes

B-1 – B-3: Waters classified B-[1-3] must be maintained suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming and recreation; wildlife (birds, mammals, amphibians and reptiles); the growth and propagation of non-salmonid fishes and associated aquatic life; and agricultural and industrial water supply purposes.

C-1 – C-3: Waters classified as C-[1-3] must be maintained suitable for bathing, swimming and recreation; wildlife (birds, mammals, amphibians and reptiles); the marginal growth and propagation of non-salmonid fishes and associated aquatic life; and agricultural and industrial water supply

purposes. (for C-2: The quality of these waters is naturally marginal for drinking, culinary, and food processing purposes and agricultural and industrial water supply purposes. Degradation that will impact existing uses will not be allowed.)

Narrative Standard – Section 1.3.13 General Requirements and Limitations

1. Reservation surface waters must be free from substances that are or may become injurious to public health, safety, welfare, or any of the designated or existing beneficial uses. Such substances may or will:

a) Settle to form objectionable sludge deposits or emulsions beneath the surface of the water or upon adjoining shorelines;

b) Create floating debris, scum, a visible oil film (or be present in concentrations at or in excess of 10 milligrams per liter) or globules of grease or other floating materials;

c) Produce odors, colors or other conditions that create a nuisance or render undesirable tastes to fish flesh or make fish inedible;

d) Create concentrations or combinations of materials that are toxic or harmful to human, animal, plant, or aquatic life except for pesticide application as described in Section 1.3.13 (4); and

e) Create conditions that produce undesirable aquatic life.

2. No pollutants and/or pollution may be discharged which, either alone or in combination with other pollutants and/or pollution, will cause exceedances of surface water quality standards (designated uses, numeric, narrative, and antidegradation).

Antidegradation – no wetland specific language; Tier 3 waters are those in primitive or wilderness areas.

Wetland Definition – none

Definitions –

15. "Naturally occurring water quality" means the quality of a waterbody over which there has been little or no human influence and is described by the range, mean, mode, and other appropriate descriptors of seasonal water quality in Reservation waters.

19. "Outstanding Tribal Resource Waters (OTRW)" means all Reservation groundwater, surface waters, and wetlands.

28. "Surface waters" means any waters on the surface of the Reservation, including but not limited to streams (permanent, intermittent, and ephemeral), lakes, ponds, wetlands, seeps and springs, reservoirs, and irrigation and drainage systems discharging into a stream, lake, pond, wetland, reservoir, or other surface water.

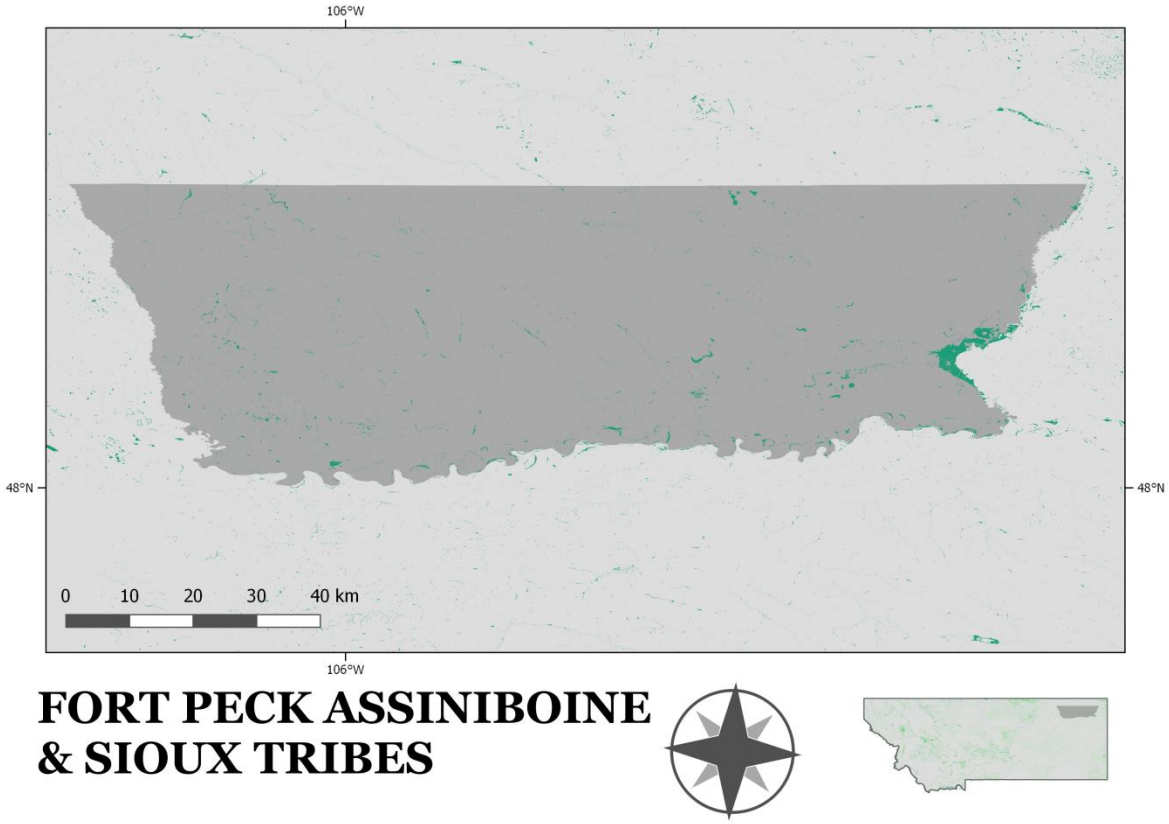
Natural Wetland Quality – 1.3.4.2. The Department recognizes that the natural water quality of wetlands may differ from that of associated streams. The existing water quality of unimpaired wetlands and wetland functions and values will be protected. Wetlands will be restored and enhanced when considered degraded. **part of classification section**

Narrative Standard precedence (Section 1.3.2.2) – Where interpretation of the narrative water quality standard is more stringent than the applicable numeric standard located within the numeric criteria chart of the specific standards set forth in Section 1.3.4 through 1.3.12, the narrative standard will always take precedence.

**Address the proper use of pesticides in the narrative biological standards sections.*

Fort Peck Assiniboine and Sioux Tribes (MT)

The Fort Peck Reservation is located in northeastern Montana on the Missouri River. A wetland specific use (wetland) and cultural designated use apply to wetlands. Narrative and numeric criteria apply to classified wetlands, the narrative criteria only applies to unlisted wetlands. Antidegradation Tier 3 protections apply to parks and refuges.



The Fort Peck Reservation has 33,528 acres of wetlands (in green) according to the National Wetland Inventory.

Beneficial Uses – VIII. Designated Uses

d) Cultural Uses – The ceremonial and religious uses of waters include but are not limited to activities such as medicine lodges, sweat lodges, and Sundance ceremonies by members of Assiniboine-Sioux that requires protection of valuable aquatic and riparian habitat. This use may also cause the human body to come into primary contact (direct) to the point of complete submergence and secondary contact with the water. Direct contact may expose sensitive body organs such as eyes, ears, nose and cause accidental and/or intentional ingestion and inhalation. Secondary contact includes the use of medicinal plants and/or other vegetation associated with the riparian zone and wetland areas along the creeks,/streams/and rivers of the Fort Peck Reservation that are used in traditional and spiritual activities.

k) Wetlands – To maintain and restore natural wetland characteristics and functions, within the natural range of variation of the affected wetland.

Narrative Standard – V. Narrative Water Quality Criteria, VI. Narrative Biological Criteria

1) Criterion. All surface water on the reservation shall be free from substances attributable to wastewater discharges or other pollutant sources that:

a) settle to form objectionable deposits,

b) float as debris, scum, oil, or other matter forming nuisances,

c) produce objectionable color, odor, taste, or turbidity,

d) cause injury to, or are toxic to, or produce adverse physiological responses in humans animals, or plants; or

e) produce undesirable or nuisance aquatic life

Antidegradation – Tier 3 Outstanding National Resource Water designation factors include location in parks and refuges, existing water quality, ecological value, and ecological, cultural or recreational value.

Wetland Definition – 40 CFR § 116.3 definition

Definitions

ch) Waters of the Tribes refer to: [*very similar to the Waters of the U.S. definition*]

1) all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tribe;

2) all interstate waters, including interstate wetlands;

3) all other waters such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes. wet meadows, playa lakes, or natural ponds the use or degradation of which would affect or could affect interstate or foreign commerce. including any such waters:

i) which are or could be used by interstate or foreign travelers for recreational or other purposes;

ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce: or

iii) which are or could be used for industrial purposes by industries in interstate commerce.

4) all impoundments of water otherwise defined as waters of the Tribes under this definition;

5) tributaries of waters in paragraphs (1) through (4) of this definition;

6) the territorial sea; and

7) wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6) of this definition.

Assessment – VI. NARRATIVE BIOLOGICAL CRITERIA. The Fort Peck Tribes have used biological monitoring as an assessment tool on the streams within the exterior boundaries of the Reservation excluding the Missouri River. In addition to identifying water quality problems, biological monitoring data has been used and will continue to be used to prioritize abatement projects for point and non-point source activities on the Reservation. A reference condition is defined using characteristics of the biological communities observed in sites with minimal human disturbance. The reference condition is compared to the biological condition observed in the stream. This comparison is related to the biological condition category .of the stream. The biological condition categories are: full support and non-support. To prioritize mitigations. the non-support category is further divided into categories of moderately impacted, and severely impacted.

1) Criterion. Reservation waters shall be free from substances in concentrations or combinations that would adversely alter the structure and function of aquatic communities, as defined by the reference condition.

For the Missouri River, water quality shall be maintained sufficient to fully support all designated uses, including the aquatic life designated use. No adverse changes in aquatic community composition may occur.

Modifications and Qualifiers *– for Class 1 Water Aquatic Life, in Stream Beneficial Use Designation tables include a qualifications and modifiers column, which includes 'Intermittent Waterbody' and 'Goal' qualifiers.*

Attainability – Designated uses should be for the highest water quality attainable. Attainability is to be judged by whether or not the use designation can be attained in twenty years by reasonable control techniques that are determined during public hearings. At a minimum, uses are deemed attainable if they can be achieved by the imposition of effluent limits required under the Federal Act for point sources and cost-effective and reasonable best management practices for nonpoint source control, in accordance with duly adopted regulations.

VII. Water Quality Standards for Wetlands

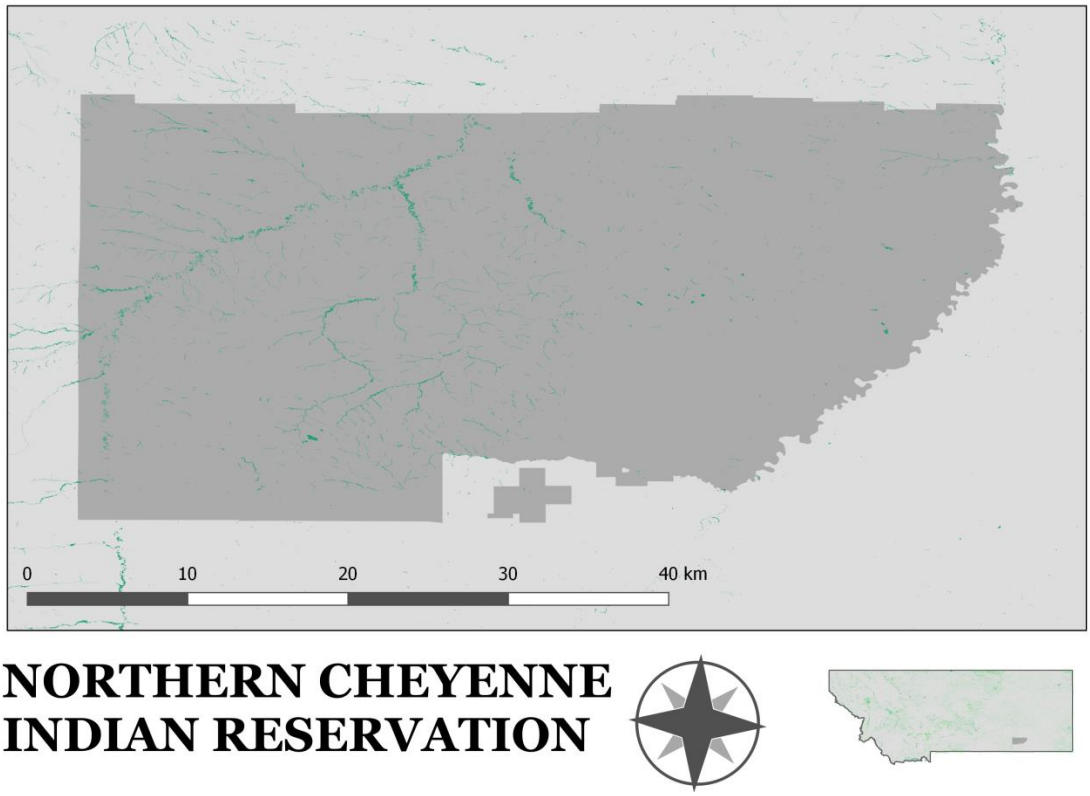
a) Wetlands Not Specifically Listed in Appendix A. Wetlands not specifically listed in Appendix A that are not constructed wetlands are considered "waters of the Tribes" and shall be subject to narrative criteria and applicable antidegradation provisions. Such wetlands are generally assumed to provide habitat capable of supporting aquatic biota (e.g., fish, macroinvertebrates, amphibians, or hydrophytic vegetation) on a regular or periodic basis. It shall be a goal of the Tribes to maintain the water quality of wetlands at naturally occurring levels, within the natural range of variation for the individual wetland. For substances that are not naturally occurring, water quality requirements shall be based on protecting existing uses of the wetland consistent with criteria, criteria assigned to hydrologically-connected surface waters, or appropriate criteria guidance issued by the U. S. Environmental Protection Agency. Wetlands shall not be considered as repositories or treatment systems for wastes from human sources.

**Appendix A lists major river segments*

b) Wetlands listed in Appendix A. For wetlands specifically listed in Appendix A, the designated uses (e.g., the Wetlands or other designated use) and numeric criteria assigned to such wetlands shall apply. In addition, such wetlands shall be subject to narrative criteria and applicable antidegradation provisions.

Northern Cheyenne Indian Reservation (MT)

The Northern Cheyenne Indian Reservation is located in eastern Montana. The tribe has a 'wetland' designated use that lists functions and uses wetlands should support, a wetland narrative standard (which includes hydrological conditions), and two numeric criteria for wetlands with specified plant species. George Parrish (EPA) recommends this standard as a good example.



The Northern Cheyenne Indian Reservation has 4,675 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – 1.3.4 Tribal Beneficial Use Classifications:

(16). Wetlands – These surface waters are suitable for maintaining and restoring natural wetland characteristics and functions, within the natural range of variation in the wetland.

1.3.8 Water Quality Standards for Wetlands.

B. Wetland water quality standards.

(1) To protect, preserve, restore and enhance the quality of waters in wetland and other waters of the tribe influenced by wetlands, the following water quality related functional values or uses of wetlands, within the range of natural variation of the affected wetland, shall be protected:

(a). Storm and flood water storage and retention and the moderation of water level fluctuation extremes;

(b). Hydrologic functions including the maintenance of dry season stream flow, the discharge of groundwater to a wetland, the recharge of groundwater from a wetland to another area and the flow of groundwater through a wetland;

(c). Filtration or storage of sediments, nutrients or toxic substances that would otherwise adversely impact the quality of other waters of the tribe;

(d). Shoreline protect against erosion through the dissipation of wave energy and water velocity and anchoring of sediments;

(e). Habitat for aquatic organisms in the food web including, but not limited to fish, crustaceans, mollusks, insects, annelids, planktonic organisms and the plants and animals upon which these aquatic organisms feed and depend upon for their development in all life stages;

(f). Habitat for resident and transient wildlife species, including mammals, birds, reptiles and amphibians for breeding, resting, nesting, escape cover, travel corridors and food; and

(g). Recreational, culturally significant wetland plant species, educational, scientific and natural scenic beauty values and uses

Narrative Standard – 1.3.8.B.(2) [*Narrative criteria within Wetland Water Quality Standards chapter*]

(2). The following criteria shall be used to assure the maintenance or enhancement of the functional values and uses identified in sub. (1):

(a). Liquids, fill or other solids or gas may not be present in amounts which may cause significant adverse impacts to wetlands;

(b). Floating or submerged debris, oil or other material(s) may not be present in amounts which may interfere with tribal rights or interest or which may cause significant adverse impacts to wetlands;

(c). Materials producing color, odor, taste or unsightliness may not be present in amounts which may cause significant adverse impacts to wetlands;

(d). Concentrations or combinations of substances which are toxic or harmful to human, animal or plant life may not be present in amounts which individually or cumulatively may cause significant adverse impacts to wetlands.

(e). Hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent significant adverse impacts on:

(i). Water currents, erosion, or sedimentation patterns;

(ii). Water temperature variations;

(iii). The chemical, nutrient and dissolved oxygen regime of the wetland;

(iv). The movement of aquatic flora and/or fauna;

(v). The pH of the wetland; and

(vi). Water levels or elevations.

(f). Existing habitats and the populations of wetland animals and vegetation shall be maintained by:
(i). Protecting food supplies for fish and wildlife;

(ii). Protective reproductive and nursery areas, and

(iii). Preventing conditions conducive to the establishment or proliferation of nuisance organisms.

Antidegradation – many wetlands and wetlands hydrologically connected to Outstanding Tribal Resource Waters as well as wetlands in parks, refuges, and wilderness areas are areas of special natural resource interest.

Definitions –

"Waters of the tribe" includes those portions of all reservation watersheds within and including the boundary of the reservation, and all ponds, reservoirs, streams, springs, wells, marshes, watercourses, drainage systems and other surface or ground water, natural or artificial, tribal or allotted, within the reservation or its jurisdiction.

(12). Wildlife [*Beneficial Use*] – These surface waters are suitable for all furbearers and waterfowl

(7). Class 2 Aquatic Life other than Fish [*Beneficial Use*] – These waters are not capable of sustaining a wide variety of invertebrate aquatic biota, including sensitive species, due to physical habitat, water

flows or levels, or uncorrectable water quality conditions that substantially limit the diversity of species.

Wetland Definition – 40 CFR §116.3 + 'Wetlands are recognized as "Waters of the tribe."'

Numeric Criteria – 1.3.8.B.(3) The following numeric criteria shall apply to wetlands that contain any of the following culturally significant wetland plant species:

(a) Sodium Adsorption Ratio (SAR) shall not exceed 2.0

(b) pH range shall remain within 6.9 to 8.9

(i-xxxi *Culturally relevant species*)[June/Service Berry (*Amelanchier alnifolia*), Red Osier Dogwood (*Cornus stolinifera*), Common spikerush (*Eleocharis palustris*), Horsetail, Field (*Equisetum arvense*), Wild licorice (*Glycyrrhiza lepidota*), Goose Berry, red shoot (*Ribes setosum*), Mint/Field (*Mentha arvensis*), Horsemint (*Monarda fistulosa*), Water plant (*Nasturtium officinale*), Sweet Medicine (*Oxtropis lamnbertii*), Chokecherry (*Prunus virginiana*), Cottonwood (*Populus deltoides*), Box elder (*Acer negundo*), Green ash (*Fraxinus Pennsylvania*), Sandbar willow (*Salix exigua*), Snow berry (*Symphoricarpos occidentalis*), Cattail (*Typha latiofolia*), Wild Plum (*Prunus americana)*, Sweet Grass (*Heirochloe odorata*), Quaking aspen (*Populus tremuloides*), Saw beak sedge (*Carex stipata*), Leafy aster (*Aster foliacius*), Stinging nettle (*Urtica dioica*), Bulrush (*Scirpus nevadensis*), Arrow leaf (*Sagitarria latifolia*), Golden current (*Ribes aureum*), Skunkbush sumac (*Rhus tribobata*), Milkweed, showy (*Asclepias speciosa*), Western yarrow (*Achilliea millefolium*), Raspberry, red (*Rubes idaues*), Rose bush (*Rosa arkansana*).]

C. Wetlands in areas of special natural resource interest – Wetlands in areas of special natural resource interest include those wetlands both within the boundary of designated areas of special natural resource interest, such as outstanding tribal resource waters, and those wetlands which are in proximity to or have a direct hydrologic connect to such designated areas. For the purpose of this chapter, the following are designated as areas of special natural resource interest:

(1). Cold water communities defined in the Tribal surface water quality standards, including all salmonid streams and their tributaries;

(2). Tribal designated wild and scenic rivers and waterways;

(3). Unique and significant wetlands identified by the Tribe as possessing culturally significant wetlands plant species and areas designated by the United States Environmental Protection Agency under §404, 33USC 1344 (c);

(4). Calcareous fens (Low, flat, swampy land; bog areas, composed of, containing or characteristic of calcium carbonate, calcium, or limestone; chalky).

(5). Habitat used by Tribal or federally designated threatened or endangered species;

(6). Tribal parks, forests, trails and recreation areas;

(7). Tribal fish and wildlife refuges and fish and wildlife management areas;

(8). Tribal designated wildlife areas;

(9). Culturally significant wetland areas;

(10). Any other surface waters identified as outstanding tribal resources waters (OTRW) in the Tribal surface water quality standards.

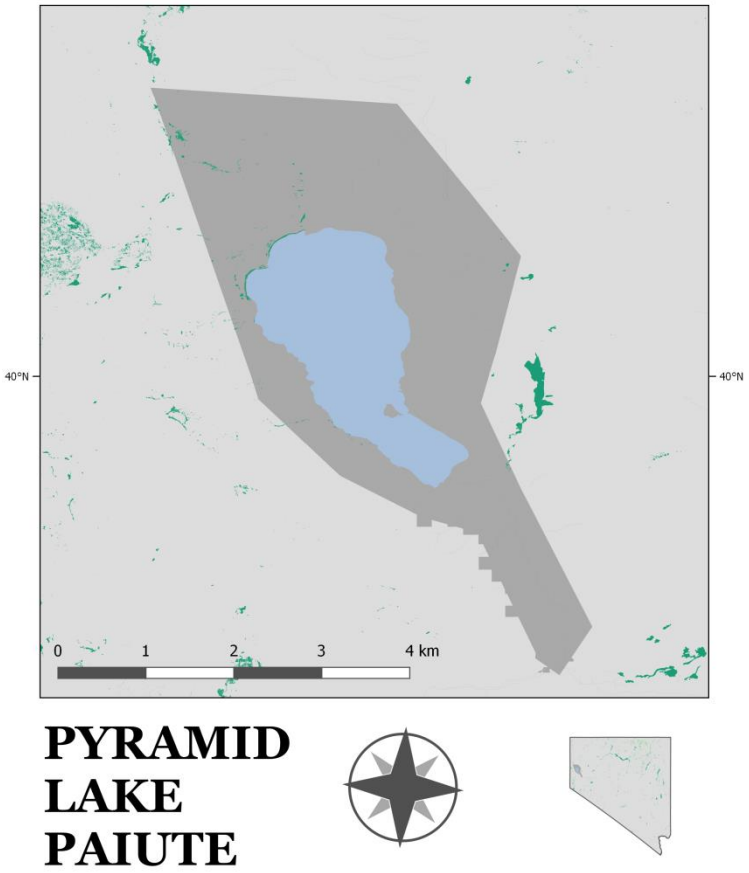
(11). Springs (Groundwater issues or discharge at the earth's surface, the formation is resultant of various subsurface conditions).

(12). Seeps (A spot where water trickles out of the ground to form a pool).

**Included wetlands are Waters of the tribe in wetlands definition, not in waters definition.*

Pyramid Lake Paiute Tribe (NV)

The Pyramid Lake Paiute Tribe reservation is located in western Nevada. The tribe has a specific wetland use (WTLD) and other uses assumed to apply to wetlands: Riparian Habitat, Indigenous Aquatic Life, Wildlife and Wildlife Habitat, Freshwater Replenishment, Groundwater Recharge, and Water Quality Enhancement. Most standards are for internally drained Pyramid Lake, including site-specific standards.



The Pyramid Lake Paiute Tribe reservation has 2001 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Beneficial Uses (pg 10):

FRSH - Freshwater Replenishment. For the purpose of increasing instream flows to maintain or improve surface water quality (e.g. reducing TDS) (TR/PL/PS).

GRND - Groundwater Recharge. For the purpose of recharge of groundwater for future extraction, maintenance of water quality, or other purposes (TR/PS).

RIPH - Riparian Habitat. For the purpose of maintaining and enhancing the growth and survival of riparian vegetation (TR/PS/SWB).

WILD - Wildlife and Wildlife Habitat. For the purpose of protection and propagation of wildlife (including fish, birds and other water dependent biota), and supporting wildlife habitat (TR/PL/PS/SWB).

WTLD - Wetland Habitat. For the purpose of protection and propagation of wildlife (including amphibians, fish, birds and other water dependent species), and the protection of plant and wildlife habitat (TR/PL/PS/SWB).

WQEN - Water Quality Enhancement. For the purpose of supporting enhancement or improvement of water quality in a downstream water body (TR/PS)

Narrative Standard – Narrative Standards of Water Quality (pg 12)

These narrative standards apply to Pyramid Lake, the lower Truckee River, and tributaries or wetlands to these water bodies. In addition, these narrative standards apply to all other surface water bodies within the exterior boundaries of the PLIR including, but not limited to, ephemeral, intermittent, or perennial streams, springs, and wetlands.

Bacteria, Coliform – Waters shall not contain concentrations of coliform bacteria attributable to human wastes.

Bioaccumulation – Toxic pollutants shall not be discharged as a result of human activities at levels that will bioaccumulate in aquatic resources to levels that are harmful to human health or aquatic life.

Biostimulatory Substances – Waters shall not contain biostimulatory substances in concentrations that cause aquatic growths to the extent that such growths promote nuisance conditions or adversely affect beneficial uses.

Chemical Constituents – Waters designated as IRRG or LSWT shall not contain concentrations of chemical constituents in amounts that adversely affect their beneficial uses for agricultural purposes. Waters designated as WTLD shall not contain concentrations of chemical constituents in amounts that adversely affect their beneficial uses for propagation and/or development of sensitive wildlife species. Waters shall not contain concentrations of chemical constituents in amounts that adversely affect water for any beneficial uses.

Color – Waters shall be free of coloration producing materials and/or substances that causes nuisance or adversely affects the water for beneficial uses. The natural color of fisheries or other inland surface water resources shall not be impaired.

Floating Materials – Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect the water for beneficial uses.

Oil and Grease – Waters shall not contain oils, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect the water for beneficial uses.

Pesticides – Pesticide and adjuvant concentrations in water and aquatic sediments shall not reach or exceed levels that impair the health or reproductive success of human, animal, plant, or aquatic life. Pesticides are defined under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 2(u) as “any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest”. Pesticides and associated adjuvants shall only be used in a manner consistent with the USEPA approved labeling. To use any registered pesticide in a manner that is inconsistent with the labeling is in violation of FIFRA Section 12 (G). [Pesticides are defined to include, herbicides, insecticides, fungicides, piscicides, rodenticides and other agronomic and agricultural poisons]

Radioactivity – Radionuclides shall not be present in concentrations which are deleterious to human, plant, animal, aquatic life or which result in the accumulation of radionuclides in the food web to the extent which presents a hazard to human, plant, animal, or aquatic life.

Sediment and Turbidity – The suspended sediment load and suspended sediment and turbidity concentrations shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses. Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or that adversely affects the water for beneficial uses.

Species Composition – Communities and populations of aquatic biota, including invertebrate, vertebrate and plant species, shall not be degraded as a result of point source or nonpoint source discharge. This applies to transient as well as cumulative conditions. Short-term variances from these objectives may be allowed for actions that are being taken to fulfill statutory requirements under Tribal law or the federal Endangered Species Act.

Taste and Odor – Waters shall not contain taste or odor-producing substances discharged from activities in the watershed in concentrations that impart undesirable tastes or odors to fish or other edible products of aquatic origin, that cause nuisance or that adversely affect the water for beneficial uses. The natural taste and odor of fish used for human consumption shall not be impaired.

Temperature – The ambient receiving water temperature of all waters shall not be altered by point or nonpoint source inputs unless it can be demonstrated to the satisfaction of the Pyramid Lake Paiute Tribal Council and the TIDT that such an alteration in temperature does not adversely affect the water for beneficial uses.

Toxicity – All waters shall be maintained free of toxic substances which enter the waterbody from human activities in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. The concentrations of toxic pollutants in the water column, sediments, or biota shall not adversely affect water for beneficial uses.

Antidegradation – no wetland-specific language

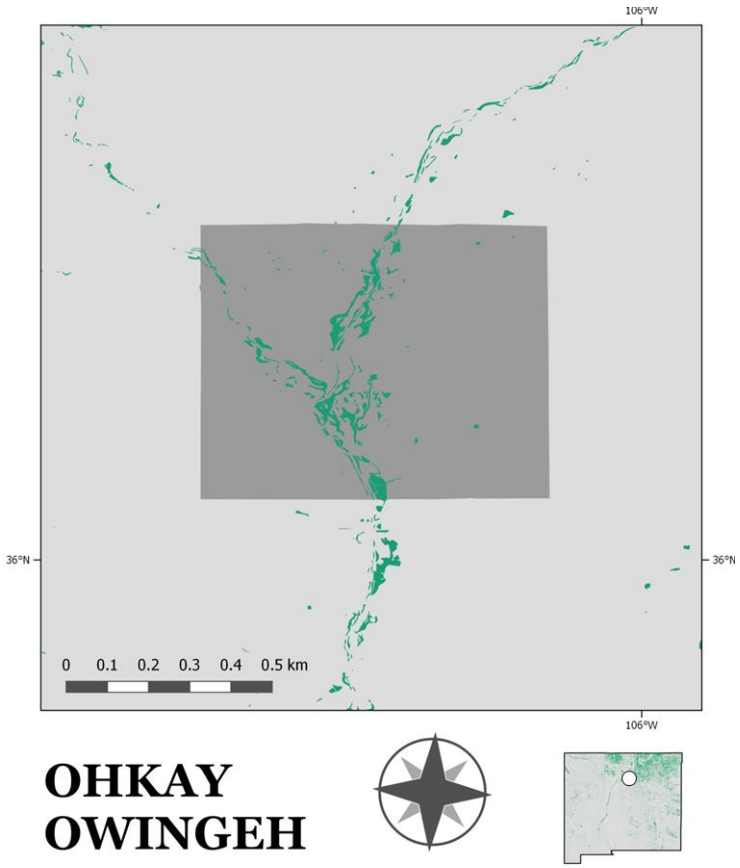
Wetland Definition – none

WSES - Water of Special Ecological Significance. For the purpose of preserving the unique ecological status of Pyramid Lake as one of the few large, deepwater, saline Lakes in the world (PL) and to maintain the existing higher quality of the lower Truckee River (TR).

Site specific standards – *have site specific standards (and rationale) for Pyramid Lake, an internally draining basin, for total dissolved solids, nitrogen, phosphorus, arsenic, and mercury. Related to natural levels of some toxics in soils, most limiting nutrient, and high salinity.*

Ohkay Owingeh (NM)

The Ohkay Owingeh pueblo is located in northern New Mexico. The pueblo has no wetland specific uses or standards, but water quality standards apply to all waters, including wetlands that fall under the definition of waters of the U.S.



The Ohkay Owingeh pueblo has 655 acres of wetlands according to the National Wetland Inventory.

Designated Uses – Section V. Uses and Standards for Designated Water Bodies

C. The uses and standards are as follows for the Ohkay Owingeh Tribal Lakes [*guessing this is most appropriate*]

1. Uses:

a. Marginal coldwater fishery use

b. Warm water fishery use

c. Primary contact recreational use

d. Secondary contact recreational use

e. Agricultural water supply use

f. Industrial water supply use

Narrative Standard – Section III. General Standards. The following General Standards apply to all surface waters of Ohkay Owingeh, including intermittent and ephemeral streams, provided, however, that where Sections Iv and V, below, set stricter criteria for designated water bodies, the stricter criteria superseded the General Standards.

A. Stream Bottom Deposits: Surface waters shall be free from water contaminants from other than natural causes that may settle and have a deleterious effect on the aquatic biota or that will adversely alter the physical or chemical properties of the water or the bottom sediments.

B. Floating Solids, Oil, and Grease: Surface waters shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes (including visible films of oil, globules of oil, grease, or solids in or on the water, or coatings on stream banks). As a guideline, oil and grease discharged into surface waters shall not exceed 10 mg/liter average or 15 mg/liter instantaneous maximum.

C. Color: Surface waters shall be free from true color-producing materials from other than natural causes that create an aesthetically undesirable condition. Color shall not impair the designated and other attainable uses of a water body. Color-producing substances from other than natural sources are limited to concentrations equivalent to 70 color units (CU).

D. Odor and Taste: Contaminants from other than natural causes are limited to concentrations that do not impart unpalatable flavor to fish, and that do not result in offensive odor arising from the water, and that do not otherwise interfere with the designated and other attainable uses of a water body. Taste and odor-producing substances from other than natural origins shall not interfere with the production of a potable water supply by modern treatment methods. The criteria adopted to prevent organoleptic effects are found in Appendix B.

E. Nuisance Conditions: Plant nutrients or other substances stimulating algal growth, or growth of excessive rooted aquatic vegetation from other then natural causes shall not be present in concentrations that produce objectionable algal densities or nuisance aquatic vegetation, or that result in a dominance of nuisance species instream, or that cause nuisance conditions in any other fashion. Plant nutrient concentrations shall not be permitted to reach levels which result in man-induced eutrophication problems. If nuisance conditions resulting from plant nutrients are identified in the surface waters of Ohkay Owingeh, limitations for such nutrients may be established by Ohkay Owingeh in accordance with the U.S. Environmental Protection Agency's [...] (EPA 822-8-00-016, December 2000) and incorporated into these Surface Water Quality Standards.

F. Pathogens: Surface waters shall be virtually free from pathogens. Waters used for irrigation of table crops (~. lettuce) shall be virtually free of Salmonella and Shigella species, and pathogens, which includes bacteria, viruses and parasites.

G. Turbidity: Turbidity attributable to other than natural causes shall not reduce light transmission to a point where aquatic biota are inhibited or alter color or visibility to a point that causes an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 NTU over background when background turbidity is 50 NTU or less, with no more than a 10 percent increase when background turbidity is more than 50 NTU.

H. Mixing Zones: Where effluent is discharged into surface waters, a continuous zone shall be maintained in which the water is of adequate quality to allow the migration of aquatic life with no significant effect on their population. The cross-sectional area of wastewater mixing zones shall generally be less than 1/4 of the cross-sectional area or flow volume of the receiving stream. In intermittent or ephemeral streams, discharges shall meet all applicable numeric and narrative criteria at the point of discharge. There shall be no acute toxicity in the mixing zone. Numeric acute criteria shall be attained at the point of discharge. There shall be no chronic toxicity at the edge of the mixing zone. [...]

I. Radioactive Materials: Concentrations of gross alpha and gross beta particle activity shall not exceed the concentration caused by erosion of naturally-occurring geologic materials. The combined dissolved concentration of Radium-226 and Radium-228, shall not exceed 5 picocuries per liter. Gross alpha particle concentrations, including Radium-226 but excluding radon and uranium, shall not exceed 15 picocuries per liter. The average annual concentration of beta particles and of photon radioactivity in surface waters shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year. Tritium concentrations shall not exceed 20,000 picocuries per liter and Strontium 90 concentrations shall not exceed 8 picocuries per liter.

J. Temperature: The introduction of heat by other than natural causes shall not increase the temperature in a stream, by more than 2.7° C (5°F), based upon the weekly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) outside a mixing zone. In lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.7° C (3° F) above that which existed before the addition of heat of artificial origin, based upon the average of temperatures taken from the surface to the bottom or surface to the bottom of the epilimnion (if stratified). The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. In no case shall man-introduced heat be permitted when the maximum temperature specified for the reach (20° C/68° F for coldwater fisheries and 32.2° C/ 90° F for warmwater fisheries) would thereby be exceeded. Privately-owned lakes and reservoirs used in the process of cooling water for industrial purposes may be classified using a less stringent special-use standard for thermal components, provided, however, that the water released from any such lake or reservoir into a stream system or into Tribal Lakes meets the surface water quality standards of the receiving stream. High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.

K. Salinity/Mineral Quality (total dissolved solids, chlorides, and sulfates): Existing mineral quality shall not be altered by municipal, industrial, and instream activities, or other waste discharges so as to interfere with the designated or attainable uses for a water body. An increase of more than 1/3 over naturally-occurring levels shall not be permitted. Numeric criteria for chlorides at 230 mg/L, for sulfates at 250 mg/L, and for total dissolved solids at 500 mg/L shall not be exceeded.

L. The pH of a stream or lake shall not be permitted to fluctuate in excess of 1.0 pH unit over a period of 24 hours for other than natural causes.

M. If a stream or lake is capable of supporting aquatic life, the dissolved oxygen standard will be a minimum of 5 mg/L.

N. Toxic Substances: 1. Toxic substances shall not be present in receiving waters in quantities that are toxic to human, animal, plant, or aquatic life, or in quantities that interfere with the normal propagation, growth, and survival of the sensitive indigenous aquatic biota. There shall be no acute toxicity within the mixing zone. There shall be no chronic toxicity at the edge of the mixing zone.
Antidegradation –no wetland-specific language

Wetland Definition – no wetland definition or Waters of the tribe/reservation definition, but include Waters of the U.S. definition, which includes wetlands and wetlands adjacent to U.S. waters. Mention impoundments several times with no definition

Pueblo of Acoma (NM)

The Pueblo of Acoma is located in western New Mexico. Wetlands of the tribe hold the same uses as the streams they are associated with. The narrative standard applies to all waters, including wetlands.

The Pueblo of Acoma has 835 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section V. Designated Uses for Water Bodies of the Pueblo of Acoma:

> A. Streams. […] The uses for all other perennial, intermittent and ephemeral streams that pass through the Pueblo of Acoma, including all tributaries, branches, springs, standing water, and wetlands thereof, are A&W$_e$[2], GWR[3], Agl[4], AgL, and PBC.
>
> > 3. Aquatic and Wildlife (ephemeral) (A&W,). An ephemeral habitat is a stream reach, lake, or other water body where water temperature and other characteristics are periodically suitable for support and propagation of animals, plants, or other organisms (excluding salmonids). […]
> >
> > 8. Groundwater Recharge (GWR). Groundwater recharge use means any surface water that recharges groundwater. Surface waters designated as groundwater recharge must meet the standards for the aquifer being recharged as well as the surface water standards. […]
> >
> > 6. Agricultural Irrigation (Agl) and Agricultural Livestock Watering (AgL). Agricultural irrigation means the use of surface waters or groundwaters for irrigation of crops. Agricultural livestock watering means the use of surface waters or groundwaters as a supply for water consumption by livestock. […]
> >
> > 5. Partial Body Contact (PBC). Partial body contact means the use of a stream reach, lake, or other water body in which contact with the water may, but need not, occur and in which the probability of ingesting water is minimal; examples are fishing and boating. […] In addition, the open water

shall be free from concentrations of algae that cause a nuisance condition or gastrointestinal or skin disorders

G. Surface and Groundwater Use Designations [...] The General Standards (Section III) shall apply to streams, lakes, reservoirs, canals, drains, groundwater, ponds, springs, and wetlands, whether perennial, ephemeral, or intermittent in nature. [...]

Narrative Standard – Section III. General Standards

A. Stream and Lake Bottom Deposits. Surface waters shall be free from contaminants (other than those resulting from natural causes) that may settle and have a deleterious effect on the aquatic biota or that will significantly alter the physical or chemical properties of the water or the bottom sediments of streams or lakes.

B. Floating Solids, Oil, and Grease. Acoma waters shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes (including visible films of oil and globules of oil, grease, or solids in or on the water, or coatings on stream banks). As a guideline, oil and grease discharged shall not exceed 10 milligrams per liter (mg/L) average or 15 mg/L maximum.

C. Color. Acoma waters shall be free from color-producing materials (other than those resulting from natural causes) that create an aesthetically undesirable condition. Color shall not impair the designated or other attainable uses of a water body. Color-producing substances from other than natural sources are limited to concentrations equivalent to 70 color units (CU).

D. Odor and Taste. Contaminants from other than natural causes are limited to concentrations that do not impart unpalatable flavor to fish, that do not result in offensive odor or taste arising from the water, and that do not otherwise interfere with the designated and other attainable uses of a water body.

E. Nuisance Conditions. Plant nutrients or other substances stimulating algal growth from other than natural causes shall not be present in concentrations that produce objectionable algal densities or nuisance aquatic vegetation, or that result in a dominance of nuisance species instream, or that cause nuisance conditions in any other fashion. When stricter requirements are not established elsewhere in these Standards, the dissolved oxygen shall be maintained at 2 mg/L in order to prevent nuisance conditions from other than natural causes. Phosphorus and nitrogen concentrations shall not be permitted to reach levels that result in man-induced eutrophication problems. As a guideline, total phosphorus shall not exceed 100 micrograms per liter (µg/L) in streams or 50 µg/L in lakes and reservoirs, except in waters highly laden with natural silts or color that reduces the penetration of sunlight needed for plant photosynthesis, or in other waters where it can be demonstrated that algal production will not interfere with or adversely affect designated and other attainable uses. Alternative or additional nutrient limitations for surface waters may be established by the Pueblo of Acoma and incorporated into water quality management plans.

F. Pathogens. Waters shall be virtually free from pathogens (viruses, bacteria, or parasites). Waters used for irrigation of table crops (e-g., lettuce) shall be free of salmonella and shigella species.

G. Turbidity. Turbidity attributable to other than natural causes shall not reduce light transmission to a point at which aquatic biota are inhibited or to a point that causes an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 nephelometric turbidity units (NTU; a measure of turbidity in water) over background when background turbidity is 50 NTU or less or, when background turbidity is more than 50 NTU, no more than a 10 percent increase over background turbidity.

H. Mixing Zones. Where effluent is discharged into surface waters, a continuous zone shall be maintained in which the water is of adequate quality to allow the migration of aquatic life with no significant effect on their population [...]

I. Radioactive Materials. Concentrations of radioactive constituents shall not exceed the concentrations caused by naturally occurring materials. Specific numeric criteria for radioactive constituents are listed in Appendix A, Table A-3.

J. Temperature. The introduction of heat by other than natural causes shall not increase the temperature in a stream, outside a mixing zone, by more than 2.7"C @OF), based upon the C monthly average of the maximum daily temperatures measured at mid-depth or 3 feet (whichever is less) outside the mixing zone. In lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.7OC (3°F) above that which existed before the addition of heat of artificial origin, based upon the average of temperatures taken from the surface to the bottom of the lake, or surface to the bottom of the epilimnion (if stratified). The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. [...] High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.

K. Salinity/Mineral Quality (total dissolved solids, chlorides, and sulfates). Existing mineral quality shall not be altered by municipal, industrial, and instream activities or by other waste discharges in a manner that interferes with the designated or attainable uses for a water body. Numerical criteria for inorganic constituents as defined in Appendix A shall not be exceeded.

L. pH. The water quality standards for pH shown in Appendix A, Table A-3 shall not be violated by other than natural causes.

M. Dissolved oxygen. If a stream or lake is capable of supporting aquatic biota, the dissolved oxygen standard will be a minimum of 5 mg/L.

N. Dissolved gases. Surface water and groundwater shall be free of nitrogen and other dissolved gases at levels above 110 percent saturation when this super saturation is attributable to municipal, industrial, or other discharges.

O. Fecal coliform bacteria. The water quality standards for fecal coliform and E. coli bacteria shown in Appendix A, Table A-3 shall not be exceeded.

P. Toxic Substances. 1. Toxic substances shall not be present in receiving waters in quantities that are toxic to human, animal, plant, or aquatic life, or in quantities that interfere with the normal propagation, growth, and survival of the sensitive indigenous aquatic biota. Within the mixing zone, there shall be no acute toxicity, and at the edge of the mixing zone, there shall be no chronic toxicity. [...].

Q. Biological Integrity. Biological integrity refers to the ability to support and maintain a healthy and diverse community of organisms representative of the natural habitat of the region. Biological integrity shall be maintained within all waters of the Pueblo of Acoma. Modifications through the addition of pollutants or through physical alteration that adversely affect or decrease the diversity and propagation of aquatic biota are not allowed. Effects will be measured by comparisons to upstream conditions or other appropriately selected reference sites within a comparable ecological region. Selected reference locations will represent natural conditions in which indigenous aquatic communities are healthy and can reproduce fertile offspring (e.g., the Rio San Jose near Anzac Springs).

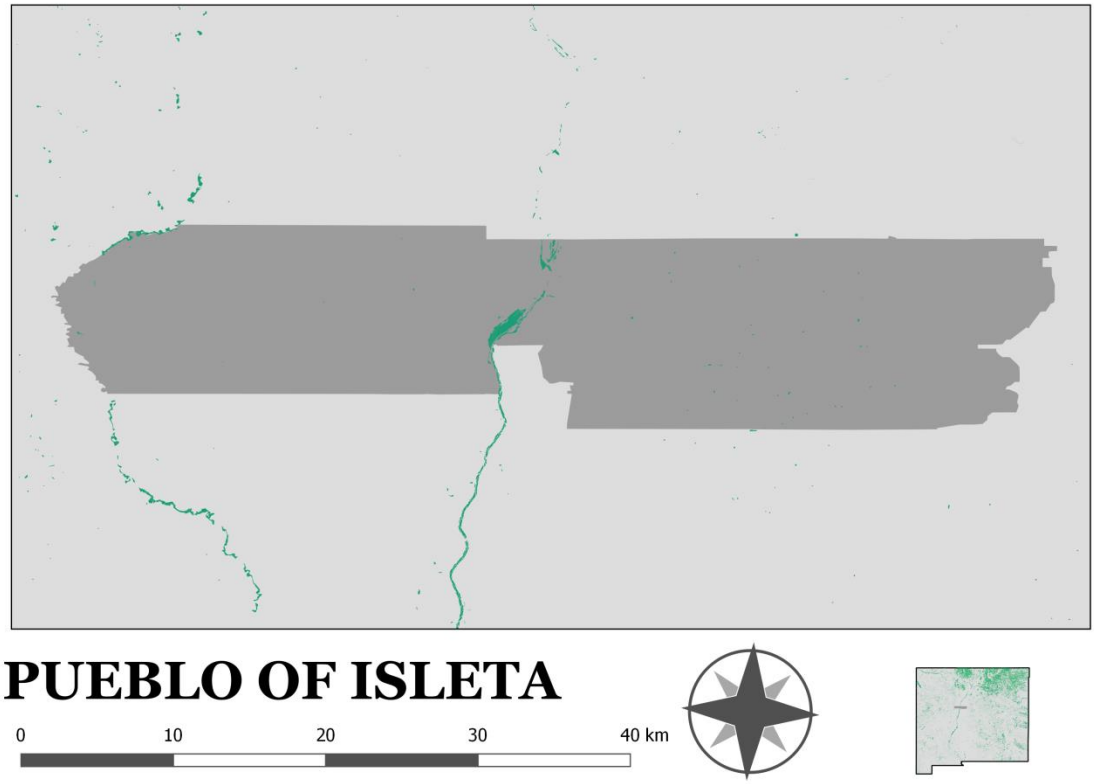
Antidegradation – nothing wetland-specific

Wetland Definition – 40 CFR §116.3 + cienegas, tinajas

**Narrative nutrient criteria include guidelines for dissolved oxygen, phosphorus, and nitrogen.*

Pueblo of Isleta (NM)

The Pueblo of Isleta is located in central New Mexico. No wetland-specific uses or criteria have been developed. Wetlands protected in standards are those considered waters of the U.S. or associated with streams and lakes of the pueblo. Narrative criteria apply to all waterbody types, from ephemeral to perennial.



The Pueblo of Isleta has 1,071 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section IV. Water Body Uses and Standards Specific to the Uses

I. Wildlife Usage. Wildlife Usage means the use of the surface waters of the Pueblo of Isleta by nondomesticated plants and animals for direct water consumption, foraging or where the waters and their associated wetland/riparian areas are used for habitat, cover and/or propagation. Waters designated for wildlife usage shall not contain any substance at concentrations which would be deleterious to any nondomesticated plant or animal or that could bioaccumulate or biomagnify to such deleterious levels.

Narrative Standard – Section III. General Standards

A. Stream Bottom Deposits: Surface waters shall be free from water con ants from other than natural causes that may settle and have a deleterious effect o the aquatic biota or that will adversely alter the physical or chemical properties of the water or the bottom sediments.

B. Floating Solids, Oil, and Grease: Surface waters shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes (including visible films of oil, globules of oil, grease, or solids in or on the water, or coatings on s earn or lake banks). As a guideline, oil and grease discharged into surface waters shall not exceed 10 mg/liter on a weekly average or 15 mg/liter instantaneous maximum.

C. Color: Surface waters shall be free from true color-producing materials from other than natural causes that create an aesthetically undesirable condition. Color shall not impair the designated,

existing or attainable uses of a water body. Color-producing substances from other than natural sources are limited to concentrations equivalent to 70 color units (CU).

D. Odor and Taste: Contaminants from other than natural causes are limited to concentrations that do not impart unpalatable flavor to fish, and that do not result in offensive odors arising from the water, and that do not otherwise interfere with the designated and other attainable uses of a water body. Taste and odor-producing substances from other than natural origins shall not interfere with the production of a potable water supply by modem treatment methods. [...]

E. Nuisance Conditions: Plant nutrients or other substances stimulating algal growth, or growth of excessive rooted aquatic vegetation, from other than natural causes shall not be present in concentrations that produce objectionable algal densities or nuisance aquatic vegetation, or that result in a dominance of nuisance species ins earn, or that cause nuisance conditions in any other fashion. Plant nutrient concentrations shall not be permitted to reach levels which result in man-induced eutrophication problems. If nuisance conditions resulting from plant nutrients are identified in the surface waters of the Pueblo of Isleta limitations for such nutrients may be established by the Pueblo of Isleta in accordance with the U.S. Environmental Protection Agency's "Ambient Water Quality Recommendations. [...]

F. Pathogens: Surface waters shall be virtually free from pathogens. Waters used for irrigation of table crops (e.g., lettuce, peppers or onions) shall be virtually free of Salmonella and Shigella species.

G. Turbidity: Turbidity attributable to other than natural causes shall not reduce light transmission to a point where aquatic biota are inhibited or to a point that causes an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 NTU over background when background turbidity is 50 NTU or less, with no more than a 10 percent increase when background Page -7- turbidity is more than 50 NTU.

H. Mixing Zones: Where effluent is discharged into surface waters the effluent shall not result in concentrations of any contaminant exceeding any water quality criteria or in the depletion of oxygen such that oxygen concentrations fall below 5.0 ppm or the change in pH such that it falls outside the acceptable pH range.

I. Radioactive Materials: Concentrations of gross alpha and gross beta particle activity shall not exceed the concentration caused by erosion of naturally-occurring geologic materials. The combined dissolved concentration of Radium-226 and Radium-228, shall not exceed 5 picocuries per liter. Gross alpha particle concentrations, including Radium-226 but excluding radon and uranium, shall not exceed 15 picocuries per liter. The average annual concentration of beta particles and of photon radioactivity in surface waters shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year. Tritium concentrations shall not exceed 20,000 picocuries per liter and Strontium 90 concentrations shall not exceed 8 picocuries per liter.

J. Temperature: The introduction of heat by other than natural causes shall not increase the temperature in a stream, by more than 2.7 C (5 F), based upon the weekly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less). In lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.7 C (3 F) above that which existed before the addition of heat of artificial origin, based upon the average of temperatures taken from the surface to the bottom or surface to the bottom of the epilimnion (if stratified). The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. [...] High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.

K. Salinity/Mineral Quality (total dissolved solids, chlorides, and sulfates): Existing mineral quality shall not be altered by municipal, industrial, and instream activities or other waste discharges so as to interfere with the designated or attainable uses for a water body. An increase of more than 113 over naturally-occurring levels shall not be permitted.

L. The pH of a water body shall not be permitted to fluctuate in excess of 1.0 unit over a period of 24 hours for other than natural causes.

M. If a water body is capable of supporting aquatic life, the dissolved oxygen standard will be a minimum of 5 mg/l.

N. Toxic Substances: 1. Toxic substances shall not be present in surface waters in quantities that are toxic to human, animal, plant, or aquatic life, or in quantities that interfere with the normal propagation, growth, and survival of the sensitive indigenous aquatic biota. There shall be no acute toxicity and no significant chronic toxicity in any PUEBLO OF ISLETA surface water. [...]

O. Biological Integrity: All surface waters of the PUEBLO OF ISLETA with an existing or attainable fisheries use must demonstrate aquatic life communities which are similar in variety and abundance to least-disturbed waters within the Middle Rio Grande Basin and with similar hydrologic conditions. Measurements of biological integrity should include fish community structure and other associated aquatic life components. A significant adverse alteration of the abundance or variety of the aquatic life community constitutes a violation of these surface water quality standards.

P. Sediment quality: Man-made or man-induced activities shall not result in sediment with contaminants at concentrations which are toxic if absorbed by aquatic biota, livestock, wildlife or man or in quantities that interfere with the normal propagation, growth, and survival of the existing aquatic biota. Item 1

Antidegradation – no wetland-specific language

Wetland Definition – none, includes Waters of the United States definition which includes some types of wetlands

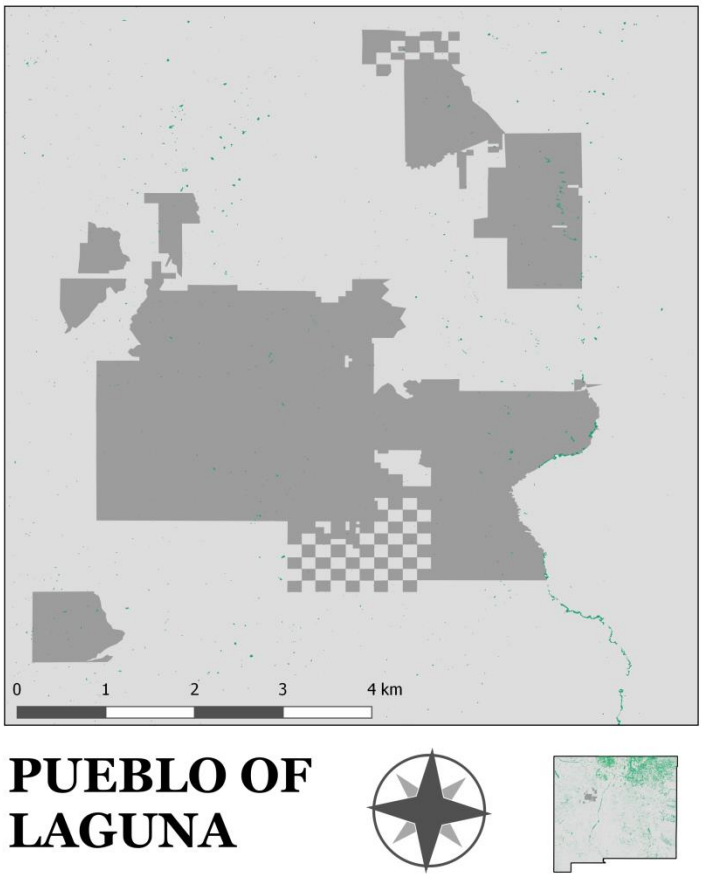
Numeric Criteria – [*specific to wildlife usage*]

SUBSTANCE (Total unless otherwise indicated)	Criteria
DDT and metabolites	11 ng/L
Mercury	1.1 ng/L
PCBS (Total of all forms)	74 ng/L
Selenium (total recoverable)	2 µG/L

Applicability – Section I.H. [...] The General Standards (Section III, below) shall be maintained at all times and shall apply to rivers, streams, lakes, reservoirs, canals, drains, ponds, springs, and wetlands, whether perennial, ephemeral, or intermittent in nature. The applicable criteria for a body of water shall be the most stringent criteria required to fully protect the most sensitive use designated for that body of water. [...]

Pueblo of Laguna (NM)

The Pueblo of Laguna is located in western New Mexico. There is no wetland-specific designated use, but wetlands as a group listed in classification of Pueblo waters and support water supply, cultural, wildlife, and aquatic life uses. The goal for the Pueblo is to maintain the quality of wetlands at background levels. Pueblo water quality standards include a section of water rights.



The Pueblo of Laguna has 1,146 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section 11-2-43. Designated Use Table:

B. Domestic Water Supply. The water body is used as a potable water supply for drinking or cooking. Disinfection or other processing may be required.

D. Primary Human Contact/Ceremonial. The water body is used for religious, traditional and cultural purposes by members of Laguna Pueblo. Such use may involve the intentional and incidental ingestion of water, immersion into water, or use of sediments.

F. Wildlife Habitat. The water body is used by nondomesticated plants and animals that are not considered pathogens, vectors for pathogens, or intermediate hosts for the pathogens of humans or domesticated livestock and plants. The water is used for direct consumption, foraging, habitat, cover, or propagation. Waters designated for this use shall not contain any substance at concentrations that would be deleterious to any nondomesticated plant or animal that could bioaccumulate or biomagnify to deleterious levels.

K. Aquatic Life. The acute and chronic criteria for aquatic life contained in Appendices II and III apply to all the fishery designated uses, except for "Fish Culture," to the extent indicated above.

M. Livestock and Wildlife Watering. The water body is consumed by livestock, nondomestic animals (including migratory birds), or both for water supply, habitation, growth, or propagation.

Narrative Standard – Section 11-2-31. General Standards

A. All Pueblo waters shall be free from pollution in amounts or combinations that, for any duration, may with reasonable probability:

(1) Injure or otherwise adversely affect human health, public safety, or the public welfare;

(2) Injure or otherwise adversely affect the habitation, growth, or propagation of indigenous aquatic plant and animal communities or any individual member of these communities, of any desirable non-indigenous member of these communities, or of waterfowl accessing the water body; or otherwise adversely affect the physical, chemical, or biological conditions upon which these communities and their indigenous or desirable non-indigenous members depend;

(3) Settle to form bottom deposits that injure or adversely affect the habitation, growth, or propagation of indigenous aquatic plant and animal communities or any member of these communities, of any desirable non-indigenous member of these communities, or of waterfowl accessing the water body; or otherwise adversely affect the physical, chemical, or biological conditions on which these communities and their members depend;

(4) Cause physical, chemical, or biological conditions that promote the habitation, growth, or propagation of undesirable, non-indigenous species of plant or animal life in the water body;

(5) Cause solids, oils, grease, foam, scum, or other objectionable floating materials and suspended substances of a persistent nature to collect on the surface of the water body, including in the form of a film or iridescence, or cause a deposit on a shoreline, bank, or on aquatic vegetation. As a guideline, oil and grease discharged onto surface waters shall not exceed 10 mg/liter on a weekly average or 15 mg/liter instantaneous maximum;

(6) Cause objectionable or aesthetically undesirable color in the water body. Color-producing substances from other than natural sources are limited to concentrations equivalent to 70 color units;

(7) Cause objectionable odor in or in the area of the water body;

(8) Cause objectionable taste in the water body or in edible plant and animal life, including waterfowl, that reside in, on, or adjacent to the water body;

(9) Cause objectionable turbidity. Turbidity shall not reduce light transmission to a point where aquatic biota are inhibited or to a point that causes an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 NTU over background when background turbidity is 50 NTU or less, with no more than a 10% increase when background turbidity is more than 50 NTU;

(10) Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or that impair recreational uses.

B. Pueblo waters shall be virtually free from pathogens. Water used for irrigation of table crops (for example, lettuce, peppers, or onions) shall be virtually free of Salmonella and Shigella species.

C. Toxic substances from other than natural sources shall not be present in Pueblo waters in quantities, concentrations, or combinations that are toxic to human, animal, plant, or aquatic life; that interfere with the normal propagation, growth, and survival of sensitive indigenous aquatic biota; or that will or are reasonably expected to bioaccumulate in tissues of fish, shellfish, or other aquatic organisms to levels that will impair the health of aquatic organisms or wildlife or result in unacceptable tastes, odors, or health risks to humans. There shall be no acute toxicity and no significant chronic toxicity in any Pueblo water. For toxic substances lacking EPA published criteria, biomonitoring data may be used to determine compliance with this standard in accordance with EPA standard acute and chronic biological test protocols, as listed in § 11-2-35.

D. No person shall place refuse, rubbish, demolition or construction debris, trash, garbage, motor vehicles, motor vehicle parts, batteries, appliances, tires, or other non-ceremonial waste into Pueblo waters or onto their banks. Item 2

Section 11-2-32. Temperature.

A. Normal, seasonal variations of temperature in surface waters shall be maintained. However, high water temperatures caused by unusually high ambient air temperatures are not violations of these standards. 19

B. In a stream, the introduction of heat by other than natural causes shall not increase the temperature, as measured upstream from the point of introduction, by more than 2.7° C (5° F), based on the weekly average of the maximum daily temperatures measured at mid-depth or three feet, whichever is less.

C. In lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.7° C (3° F) above that which existed before the addition of heat of artificial origin, based on the average of temperatures taken from the surface to the bottom or surface to the bottom of the epilimnion, if stratified.

D. In no case shall man-introduced heat be permitted when the maximum temperature specified for the reach would thereby be exceeded.

Section 11-2-33. Minerals. The existing mineral content of Pueblo waters shall not be altered by municipal, industrial, or instream activities or other waste discharges so as to interfere with their designated uses. Generally, increases exceeding one-third over naturally occurring levels will not be allowed.

Section 11-2-34. Radioactive Materials. Concentrations of radioactive constituents shall not exceed USEPA Safe Drinking Water Act (SDWA) standards except when concentrations caused by naturally occurring materials exceed those standards, in which case the latter concentrations shall apply. Notwithstanding the foregoing sentence, if a standard more stringent than the SDWA standard is indicated for a designated use, the more stringent standard will apply for that designated use.

Antidegradation – nothing wetland-specific

Wetland Definition – 40 CFR §116.3

Wetlands (Section 11-2-38) – All wetlands within the Pueblo of Laguna are Pueblo waters and are subject to narrative criteria and applicable antidegradation provisions unless site-specific numerical criteria have been assigned. It shall be a goal of the Pueblo to maintain the water quality of wetlands at natural background levels, within the natural range of variation for the particular wetland. For substances that are not naturally occurring, water quality requirements shall be based upon protecting existing uses of the wetland consistent with antidegradation requirements, the Pueblo's narrative water quality criteria, or appropriate criteria guidance issued by the U.S. E.P.A. Wetlands shall not be considered as repositories or treatment systems for wastes from human sources.

Water Rights (Section 11-2-7) –

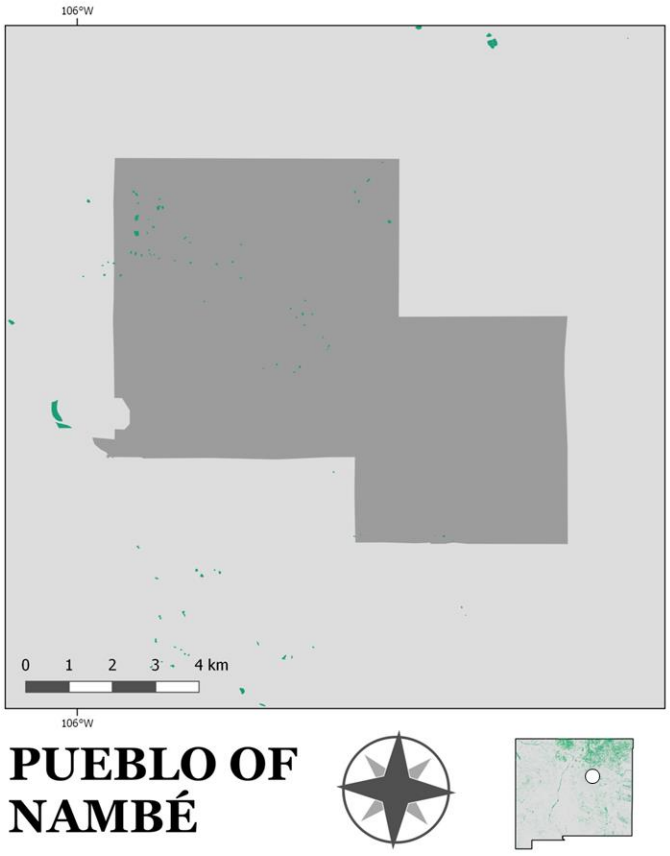
The water rights of the Pueblo and the authority of the Pueblo to allocate quantities of water and administer water rights within its jurisdiction shall not be superseded, abrogated, or otherwise impaired by these Standards.

EPA takes no action on the provision in Section 11-2-7, as this is implementation provision under Tribal authority.

Use table lists different uses for Mountain Ponds (Drinking Water, Domestic Water Supply, Primarily Human Contact/Ceremonial, Secondary Human Contact, Wildlife Habitat, Fish Culture, Aquatic Life, Livestock and Wildlife Watering) than for Wetlands.

Pueblo of Nambé (NM)

The Pueblo of Nambé is located in northern New Mexico. Wetlands associated with classified streams have the same uses as streams. Standards specify that narrative standard applies to wetlands. The narrative nuisance condition translator for dissolved oxygen is 2 mg/L, significantly lower than most aquatic life criteria.



The Pueblo of Nambé has 26 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section IV. Water Body Uses and Specific Standards

A Stream Use DesignationA.1-A.3 [...] perennial tributaries to these water bodies and, wetlands along these waterbodies including tributaries associated with those wetlands.

Recharge of domestic water supply

Fish culture

High quality cold-water fishery

Irrigation

Livestock watering and wildlife habitat,

Industrial and municipal supply

Primary contact use

Marginal cold-water fishery

Warm water fishery

Narrative Standard – Section III. General Standards

A. Stream Bottom Deposits – The stream shall be free from water contaminants from other than natural causes that will settle and cause deleterious effects to the aquatic biota or significantly alter the physical or chemical properties of the bottom.

B. Floating Solids, Oil, and Grease – All waters shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes (including visible films of oil, globules of oil, grease, or solids in or on the water, or coatings on stream banks or the stream bottom or that would damage or impair the normal growth, function or reproduction of wildlife, plant or aquatic life).

C. Color – Materials producing true color resulting from other than natural causes shall not create an aesthetically undesirable condition; nor should color impair the attainable uses of the water nor harm aquatic life.

D. Odor and Taste – Water contaminants from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish, or result in offensive odor or taste arising from the water, or otherwise interfere with the existing and attainable uses of the water, nor shall taste and odor-producing substances of other than natural origin interfere with the production of a potable water supply by modern treatment methods.

E. Nuisance Conditions – Plant nutrients or other substances stimulating algal growth from other than natural causes shall not be present in concentrations which will produce objectionable algal densities, nuisance aquatic vegetation, result in a dominance of nuisance species instream, or otherwise cause nuisance conditions. When stricter requirements are not established elsewhere in this code, the dissolved oxygen shall be maintained at 2 mg/L in order to prevent nuisance conditions from other than natural causes. The phosphorus and nitrogen concentrations shall not be increased to levels which result in man-induced eutrophication problems. The Tribal Council may establish nutrient limitation for lakes, reservoirs, and streams, and shall incorporate such limitations into appropriate water quality management plans.

F. Pathogens – The stream shall be virtually free from pathogens which includes bacteria, viruses, or parasites. In particular, waters used for irrigation of table crops such as lettuce shall be virtually free of Salmonella and Shigella species.

G. Turbidity – Turbidity attributable to other than natural causes shall not reduce light transmission to the point that the aquatic biota is inhibited or that will cause an unaesthetic and substantial visible contrast with the natural appearance of the water. Turbidity attributable to natural causes is not subject to these standards. Specifically, turbidity shall not exceed 5 NTU over background when background turbidity is 50 NTU or less; there shall not be more than a 10% increase in turbidity when background turbidity is more than 50 NTU.

H. Mixing Zones – The size of mixing zones shall be less than 1/3 of the cross-sectional area at or above 4Q3 conditions, or 1/3 of the critical stream flow of the receiving stream. In intermittent or ephemeral streams, discharges shall meet all applicable numeric and narrative criteria at the point of discharge. There shall be no acute toxicity in the mixing zone. Numeric acute criteria shall be attained at the point of discharge. There shall be no chronic toxicity at the edge of the mixing zone. Numeric chronic criteria shall be attained at the edge of the mixing zone. Mixing zones are not allowed for discharges to publicly owned lakes or reservoirs; these effluents shall meet all applicable numeric and narrative criteria at the point of discharge. Mixing zones shall not overlap ceremonial or recreational sites. Requirements for mixing zones shall be consistent with those established in other regulations such as water quality management plans and implementation plans developed by the Pueblo or by the EPA. In any waters receiving a waste discharge, a continuous zone must be maintained where the water is of adequate quality to allow the migration of aquatic life with no significant effect on their population. This is known as a zone of passage.

I. Radioactivity – Unless otherwise provided in this Code, the radioactivity of surface water shall be maintained at concentrations which do not exceed the maximum natural background concentrations in surface waters of the Pueblo.

J. Temperature – The introduction of heat by other than natural causes shall not increase the temperature, outside the mixing zone, by more than 2.7° C (5° F) in a stream, based upon the monthly

average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) outside the mixing zone. [...] The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. [...] High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.

K. Salinity/Mineral Quality (total dissolved solids, chlorides, and sulfates) – Existing mineral quality shall not be altered by municipal, industrial, and instream activities, or other wastes discharges so as to interfere with the designated uses. No increase exceeding 1/3 over naturally occurring levels may be permitted. Numeric criteria for chlorides at 230 mg/L, for sulfates at 250 mg/L, and for total dissolved solids at 500 mg/L shall not be exceeded.

L. pH – The pH of a stream or a lake shall not fluctuate in excess of 1.0 pH unit over a period of 24 hours for other than natural causes.

M. Dissolved Oxygen – If the stream is capable of supporting aquatic life, the dissolved oxygen standard shall not be less than 5 mg/L.

N. Dissolved Gases – Surface water shall be free of nitrogen and other dissolved gases at levels above 110% saturation when this supersaturation is attributable to municipal, industrial or other discharges.

O. Toxic Substances – Toxic substances such as, but not limited to, pesticides, herbicides, heavy metals, and organic solvents, shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant, or aquatic life nor as to interfere with the normal propagation, growth, and survival of the sensitive indigenous aquatic biota.

P. Narrative Biocriteria – The biological condition of any surface water body shall be assessed by comparison to the biological integrity of a "least impacted" or minimally impacted reference water to best represent the most natural condition for that surface water body type within a geographic region. The biological integrity of surface waters, as measured by multi-metric indices of benthic macroinvertebrates, fish, periphyton, or other appropriate indicators shall not significantly differ from reference waters, taking into account natural variability. Waters shall be compared with reference waters of similar size and hydrologic characteristics within the same geographic region. All wetlands on Pueblo lands which are not constructed wetlands are considered "waters within the jurisdiction of the Tribe". "Wetlands" shall be subject to narrative criteria and applicable antidegradation provisions, as well as site-specific numerical criteria if applicable. Created wetlands shall be subject only to narrative criteria.

Wetlands are generally assumed to provide habitat capable of supporting aquatic biota (e.g., fish, benthic macroinvertebrates, amphibians, or hydrophytic vegetation) on an ongoing or periodic basis. It shall be a goal of the Tribe to maintain the water quality of wetlands at naturally occurring levels, within the natural range of variation for the individual wetland. For substances that are not naturally occurring, water quality requirements shall be based on protecting existing uses of the wetland consistent with antidegradation requirements, the Tribe's narrative water quality criteria, criteria assigned to hydrologically-connected surface waters, or appropriate criteria guidance issued by the EPA. Natural wetlands shall not be considered as repositories or treatment systems for wastes from human sources.

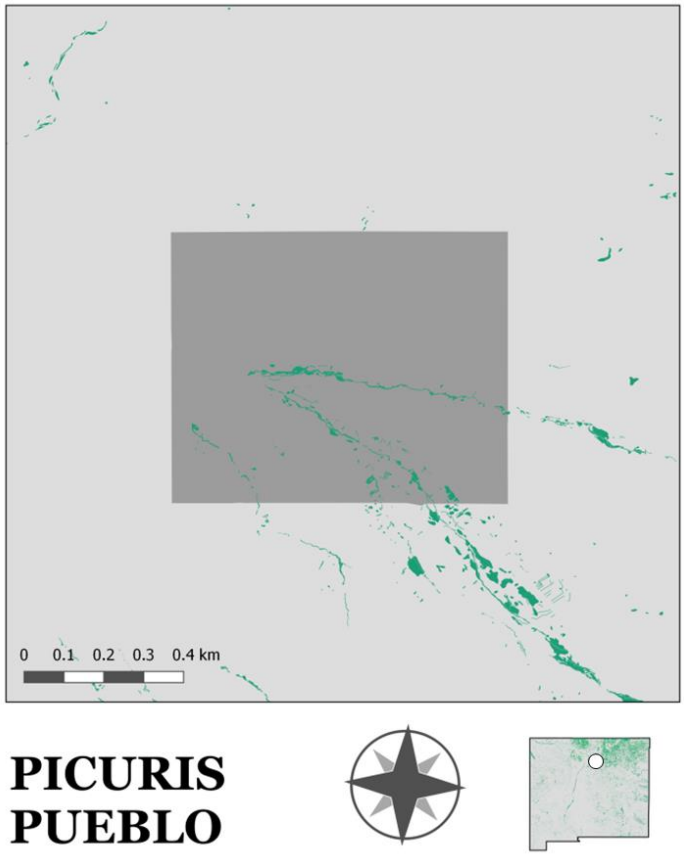
Antidegradation – no wetland-specific rule, require Pueblo to designate streams as perennial, ephemeral, or intermittent and determine numeric low flows.

Wetland Definition – 40 CFR §116.3 minus constructed wetlands

**Specify General Standards (Narrative Criteria) apply to wetlands.*

Picuris Pueblo (NM)

The Picuris Pueblo is located in northern New Mexico. Water bodies and their associated wetlands are explicitly protected by pueblo standards, which also specify uses for intermittent and ephemeral streams and wetlands. The wetlands associated with two rivers have water supply and wildlife beneficial uses. Water flow criteria as part of narrative standard establishes base flow for rivers to attain beneficial uses; part of goal to control nonpoint source pollution. When stream flow is zero criteria must be met by discharges.



Picuris Pueblo has 232 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section IV. Water Body Uses and Specific Water Quality Standards

A-B. wetlands associated with Rio del Pueblo and Rio Santa Barbara are subject to the uses and criteria of those rivers.

C. The following water body uses and the standards pertaining thereto shall apply to all intermittent or ephemeral streams, including any associated with standing water and wetlands:

Livestock watering and wildlife habitat

Irrigation

Primary contact use

Narrative Standard – Section III. General Water Quality Standards

Watercourses shall be free of any water contaminant in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property. In addition, the following narrative standards apply to all Tribal waters, unless stricter standards are impose in Section IV.

A. Stream Bottom Deposits. The stream shall be free from water contaminants from other than natural causes that will settle and cause deleterious effects to the aquatic biota or significantly alter the physical or chemical properties of the bottom.

B. Floating Solids, Oil, and Grease. All Tribal waters shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes (including visible films of oil, globules of oil, grease, or solids in or on the water, or coatings on stream banks and stream bottoms), or that would damage or impair the normal growth, function or reproduction of wildlife, plant, or aquatic life.

C. Color. Materials producing true color resulting from other than natural causes shall not create an aesthetically undesirable condition; nor should color impair the attainable uses of the water nor harm aquatic life.

D. Odor and Taste. Water contaminants from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish, or result in offensive odor or taste arising from the water, or otherwise interfere with the existing and attainable uses of the water, nor shall taste and odor-producing substances of other than natural origin interfere with the production of a potable water supply by modem treatment methods.

E. Nuisance Conditions. Plant nutrients or other substances stimulating algal growth from other than natural causes shall not be present in concentrations which will produces objectionable algal densities, nuisance aquatic vegetation, result in a dominance of nuisance species instream, or otherwise cause nuisance conditions. When stricter requirements are not established elsewhere in this code, the dissolved oxygen shall be maintained at 2 mg/l in order to prevent nuisance conditions from other than natural causes. The phosphorus and nitrogen concentrations shall not be increased to levels which result in man-induced eutrophication problems. The Tribal Council may establish nutrient limitation for lakes, reservoirs, and streams, and shall incorporate such limitations into appropriate water quality management plans.

F. Pathogens. The stream shall be virtually free from pathogens which include bacteria, viruses, or parasites. In particular, waters used for irrigation of table crops such as lettuce shall be virtually free of Salmonella and Shigella species.

G. Turbidity. Turbidity attributable to other than natural causes shall not reduce light transmission to the point that the normal growth, function, or reproduction of aquatic life is impaired or that will cause substantial visible contrast with the natural appearance of the water.

Turbidity shall not exceed 5 NTU over natural background when natural background turbidity is 30 NTU or less; there shall not be more than a 10% increase in turbidity when background turbidity is more than is 30 NTU. Background turbidity shall be measured at a point immediately upstream of the turbidity-causing activity. However, limited-duration activities necessary to accommodate dredging, construction or other activities and that cause the criterion to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and all appropriate permits and approvals have been obtained. Written approval from the Tribal Council will require the Environment Department to provide technical background for each permit. For activities that are not regulated under Clean Water Act permits, implementation of the Pueblo of Picuris' approval process will require regulation under Pueblo of Picuris law. Item 2

H. Mixing Zones

I. Radioactivity. Unless otherwise outlined in these standards, the radioactivity of surface water shall be maintained at concentrations which do not exceed the maximum natural background concentrations in surface waters of the Pueblo of Picuris.

J. Temperature. The introduction of heat by other than natural causes shall not increase the temperature, outside the mixing zone, by more than 2.7" C (5" F) in a stream, based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) outside the mixing zone. Ln lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.7^0 C (3^0 F) above that which existed before the addition of heat of artificial origin, based upon the average of temperatures taken from the surface to

the bottom or surface to the bottom of the epilimnion (if stratified). The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. In no case shall man-introduced heat be permitted when the maximum temperature specified for the reach (20^0 C/68^0 F for cold water fisheries and 32.2^0 C/90°F for warm water fisheries) would thereby be exceeded. High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.

K. Salinity/Mineral Quality (total dissolved solids, chlorides, and sulfates). Existing mineral quality shall not be altered by municipal, industrial, and instream activities or other waste discharges so as to interfere with the designated uses. No increase exceeding 1/3 over naturally occurring levels may be permitted. Numeric criteria for chlorides at 230 mg/i, for sulfates at 250 mg/L, and for total dissolved solids at 500 mg/L shall not be exceeded.

L. The pH of a stream or a lake shall not fluctuate in excess of 1.0 pH unit over a period of 24 hours for other than natural causes.

M. Dissolved Oxygen. If the stream is capable of supporting aquatic life, the dissolved oxygen standard shall not be less than 5 mg.

N. Dissolved Gases. Surface water shall be free of nitrogen and other dissolved gases at levels above 110% saturation when this supersaturation is attributable to municipal, industrial or other discharges.

O. Toxic Substances. Toxic substances such as, but not limited to, pesticides, herbicides, heavy metals, and organic solvents, shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant, or aquatic life nor as to interfere with the normal propagation, growth, and survival of the sensitive indigenous aquatic biota. For lists of the applicable toxic substances, criteria published, and sensitive indigenous species life stages, reference should be made to the procedures implementing this toxic substances narrative contained in the rules, regulations, and guidelines of the Environmental Protection Agency, or any rules, regulations and guidelines adopted by the Pueblo of Picuris subsequent to adoption of these standards. Within the mixing zone, there shall be no acute toxicity. There shall be no chronic toxicity at the edge of the mixing zone.

P. Biomonitoring [to get toxic criteria]

Q. Water Flow. In order to improve controls over nonpoint sources of pollution, Tribal, Federal, State, and local resource management agencies will be encouraged and assisted to coordinate planning and implementation of programs to regulate or control runoff, erosion, turbidity, stream temperature, stream flow, and the withdrawal and use of irrigation water on a watershed approach so as to protect the quality and beneficial uses of water and related resources. Such programs may include, but not be limited to, the following:

a) Development of projects for storage and release of suitable quality waters to augment low stream flow;

b) Runoff control to reduce erosion;

c) Possible modification or irrigation practices to reduce or minimize adverse impacts &om irrigation return flows;

d) Stream bank erosion reduction projects;

e) Federal water quality restoration plans; and

f) Possible modification in snowmaking practices to reduce or minimize adverse impacts &om snow melting return flows.

Perennial rivers and streams within the watershed shall be retained with minimal base flows of 5.0 c.f.s., which is the minimal flow necessary to provide for preservation of wildlife, fish, scenic, aesthetic, traditional and other environmental values, and navigational values. Lakes and ponds shall be retained substantially in their natural condition. Withdrawals of water which would conflict therewith shall be authorized only in those situations where it is clear that overriding considerations of the public interest will be served.

Federal, State, local, tribal governments, individuals, corporations, groups, acequia associations and other entities shall be encouraged to carry out practices of conservation as they relate to the use of Tribal waters. In addition to traditional development approaches, improved water use efficiency and conservation shall be emphasized in the management of Tribal waters and in some cases will be a potential new source of water with which to meet future needs throughout the Reservation.

Numeric Criteria – D. Livestock Water and Wildlife Habitat Use (IV.2. Specific Water Quality Standards): aluminum, arsenic, boron, cadmium, chromium, cobalt, copper, cyanide (weak dissociable), lead, mercury, selenium, total residual chlorine, total DDT and metabolites, total PCB's, vanadium, zinc, radium ($^{226}Ra + {}^{228}Ra$), tritium, gross alpha

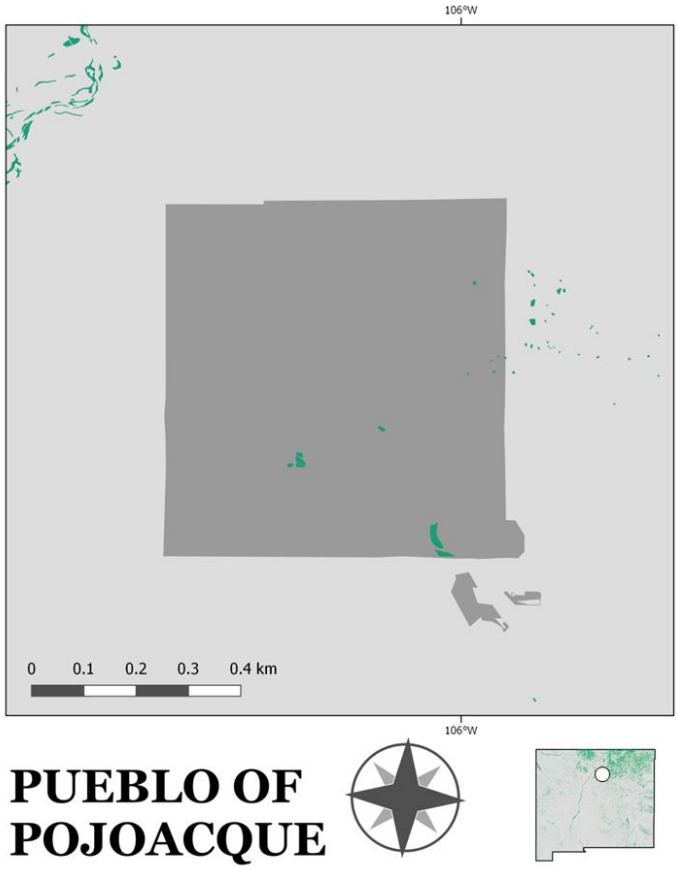
Antidegradation – no wetland-specific language

Wetland Definition – 40 CFR §116.3 minus constructed wetlands

Intermittent and Ephemeral Streams: (B. General Water Quality Standards) When intermittent and ephemeral streams have a low flow value of zero, all discharges shall meet standards for the designated uses.

Pueblo of Pojoacque (NM)

The Pueblo of Pojoacque is located in northern New Mexico. There are no wetland-specific uses but standards specify that narrative criteria apply to wetlands. The numeric translator for narrative nuisance plant criteria is2 mg/L dissolved oxygen. Some toxics criteria are specified for each use.



The Pueblo of Pojoacque has 45 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section IV. Water Body Uses and Standards Specific to Use [*guessing which could apply to wetlands*]

Livestock watering and wildlife habitat use

Groundwater recharge

Narrative Standard – Section III. General Standards

Pueblo of Pojoaque Waters shall be free of any water contaminant in such quantity and of such duration that harm; with reasonable probability, human health, animal or plant life, property, or unreasonably interfere with the public welfare or the use of property. In addition, the following narrative codes apply to all Tribal Waters, unless stricter codes are imposed in Section IV.

A. Stream Bottom Deposits: Streams shall be free from water contaminants from other than natural causes that will settle and cause deleterious effects to the aquatic biota or significantly alter the physical or chemical properties of the stream bottom.

B. Floating Solids, Oil and Grease: All waters shall be free of oils, scum, grease and other floating materials resulting from other than natural causes, that would cause the formation of a visible deposit on the bottom or stream bank or that would damage or impair the normal growth, function or reproduction of wildlife, plant or aquatic life.

C. Color: Materials producing true color resulting from other than natural causes shall not create an aesthetically undesirable condition; nor should color impair the attainable uses of the water. Color producing substances, from other than natural sources, shall be limited to concentrations equivalent to 70 color units (CU). Water color will be tested with such methods as the platinum-cobalt method.

D. Odor and Taste: Water contaminants from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish, or result in offensive odor or taste arising from the water, or otherwise interfere with the attainable uses of the water, nor shall taste and odor producing substances of other than natural origin interfere with the production of a potable water supple by modem treatment methods.

E. Nuisance Conditions: Plant nutrients or other substances stimulating algal growth from other than natural causes shall not be present in concentrations which will produce objectionable algal densities, nuisance aquatic vegetation, result in a dominance of nuisance species, or otherwise cause nuisance conditions.

1. When stricter requirements are not established elsewhere in the Revised PPWQS, the dissolved oxygen shall be maintained at 2 mg/liter in order to prevent nuisance conditions from other than natural causes.

2. The phosphorus and nitrogen concentration shall not be increased to levels, which result in man-induced eutrophication problems.

3. The Tribal Council may establish nutrient limitations for lakes, reservoirs, and streams and shall incorporate such limitations into appropriate Water Quality Management Plans.

F. Pathogens: The stream shall be virtually free from pathogens, which include bacteria, viruses or parasites. In particular, waters used for irrigation of table crops such as vegetables shall be virtually free from salmonella and Shigella species.

G. Turbidity: Turbidity attributable to other than natural causes shall not reduce light transmission to the point that the aquatic biota is inhibited or that will cause an unaesthetic and substantial visible contract with the natural appearance of the water. Turbidity attributable to natural causes is not subject to these codes. Turbidity shall not exceed 5 NTU over background when background turbidity is 50 NTU or less; there shall not be more than a 10% increase in turbidity when background turbidity is more than 50 NTU.

[H. Mixing Zones]

J. Temperature: The introduction of heat by other than natural causes shall not increase the temperature, outside the mixing zone, by more than 2.7° C/5° Fin a stream, based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) outside the mixing zone. [1. – 3. Lakes, fisheries]

K. Salinity/Mineral Quality (total dissolved solids (TDS), chlorides and sulfates: No increase exceeding 1 /3 over current naturally occurring levels may be permitted.

1. TDS shall not exceed 500 mg/L.

2. Chlorides shall not exceed 25 mg/L.

3. Sulfates shall not exceed 150 mg/L.

4. Existing mineral quality shall not be altered by municipal, industrial and in stream activities or other waste discharges so as to interfere with the designated uses.

L. pH: The pH of a stream or lake shall not fluctuate in excess of 1.0 units over a period of 24 hours for other than natural causes. pH shall be within the range of 6.6 to 8.8.

M. Dissolved Oxygen: If the stream is capable of supporting aquatic life, the dissolved oxygen standard will be a minimum of 6 mg/L.

N. Dissolved Gases: Surface Water shall be free of nitrogen and other dissolved gases at level above 110% saturation when this supersaturation is attributable to municipal, industrial or other discharges.

O. Toxic Substances: Toxic substances such as, but not limited to, pesticides, herbicides, heavy metals and organic chemicals, shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant, or aquatic life, or to interfere with the normal propagation, growth and survival of the sensitive indigenous aquatic biota.

Antidegradation – no wetland-specific language

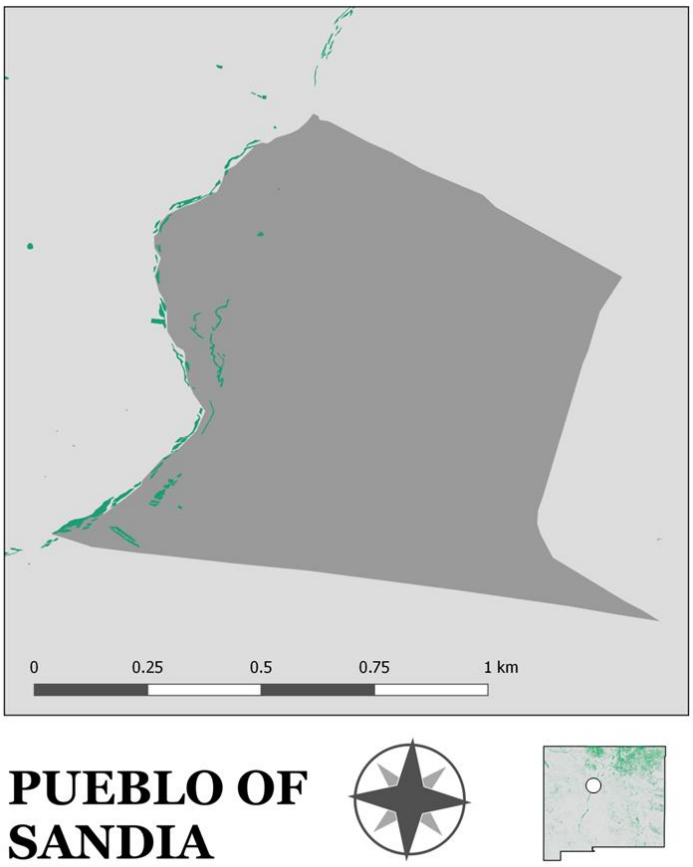
Wetland Definition – none

Numeric Criteria – Section IV. B. Segments Designated for Livestock and Wildlife Habitat: aluminum, arsenic, boron, cadmium, chromium, cobalt, copper, cyanide, lead, total residual chlorine, DDT, mercury, PCBs, selenium, vanadium, zinc, radium-226 + radium-228.

C. Segments Designated for Groundwater Recharge: arsenic, barium, cadmium, chromium, lead, selenium silver, cyanide, uranium, radium-226 + radium-228, nitrates-N, mercury

Pueblo of Sandia (NM)

The Pueblo of Sandia is located in central New Mexico. Wetlands are surface waters of the Pueblo and support the wildlife habitat beneficial use. Wetland importance is described in biocriteria section (P) of narrative criteria. The water quality goal for pueblo wetlands is to maintain water quality at naturally occurring levels within the natural range of variation. Numeric criteria for coliform, dissolved oxygen, temperature, ammonia, and turbidity have been developed for wetlands.



The Pueblo of Sandia has 153 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section V. Uses and Standards for Designated Water Bodies

D. The uses and standards are as follows for the Surface Water Ponds/Wetlands in the Pueblo of Sandia Bosque. All wetlands on the Pueblo of Sandia which are not constructed wetlands are considered "waters within the jurisdiction of the Pueblo of Sandia." Wetlands shall be subject to the narrative criteria and applicable antidegradation provisions, as well as site-specific numerical criteria below. Wetlands are generally assumed to provide habitat capable of supporting aquatic biota on an ongoing or periodic basis. It shall be the goal of the Pueblo of Sandia to maintain the water quality of wetlands at naturally occurring levels, within the natural range of variation for the individual wetland. For substances that are not naturally occurring, water quality requirements shall be based on protecting existing uses of the wetland consistent with antidegradation requirements, the Pueblo of Sandia's narrative water quality criteria, criteria assigned to hydrologically-connected surface waters, or appropriate criteria guidance issued by the U.S. Environmental Protection Agency. Natural wetlands shall not be considered repositories or treatment systems for wastes from humans.

1. Uses

a. Warmwater Aquatic Life/Fishery use. A warmwater aquatic 1ifelfishery.i~ a river or stream reach, lake, or impoundment where water temperature and other characteristics are suitable for support and

propagation of warmwater adapted aquatic life including but not limited to, individuals or species of green plants, algae, fungi, macroinvertebrates, fish (such as cyprinids, minnows, carpsuckers, large-mouth black bass, small-mouth black bass, crappie, white bass, bluegill, channel catfish, bullhead catfish or live-bearers), shellfish, snails, frogs, turtles, salamanders, or other aquatic plants and animals

b. Primary Contact Recreational use. Primary contact recreational use means the recreational use of a stream, reach, lake, or impoundment involving prolonged contact and a substantial risk of ingesting water; examples are swimming and water skiing

c. Secondary Contact Recreational use. Secondary contact recreational use means the recreational use of a stream, reach, lake, or impoundment in which contact with the water may, but need not, occur and in which the probability of ingesting water is minimal; examples are fishing and boating.

d. Fish Culture Use. Fish culture use means the use of a stream, reach, lake, or impoundment for production of coldwater or warmwater fish in a hatchery or rearing station.

e. Wildlife habitat use. Wildlife habitat use means surface waters including wetlands that are suitable to support and propagate animal and plant species. Wildlife habitat will be free from any substances at concentrations that are toxic to or will adversely affect animal and plant species that use the environments for feeding, drinking, habitat or propagation, or can bioaccumulate and impair the community of animals in a watershed or the ecological integrity of surface waters of the Pueblo of Sandia [definitions from Section IV]

Narrative Standard – Section III. General Standards.

All surface water bodies shall be free of any water contaminant in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of the property. The following narrative standards apply to all surface waters of the Pueblo of Sandia, unless stricter or additional standards are imposed in Sections IV and V below.

A. Stream Bottom Deposits – Surface waters shall be free from water contaminants from other than natural causes that may settle and have a deleterious effect on the aquatic biota or that will significantly alter the physical or chemical properties of the water or the bottom sediments.

B. Floating Solids, Oil, and Grease – Surface waters shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances resulting from other than natural causes (including visible films of oil, globules of oil, grease, or solids in or on the water, stream bottom or coatings on stream banks or that would damage or impair the normal growth, function or reproduction of wildlife, plant or aquatic life). As a guideline, oil and grease discharged into surface waters shall not exceed 10 mg/liter average or 15 mg/liter maximum.

C. Color – Surface waters shall be free from true color-producing materials from other than natural causes that create an aesthetically undesirable condition. Color shall not impair the designated and other attainable uses of a water body. Color-producing substances from other than natural sources are limited to concentrations equivalent to 70 color units (CU).

D. Odor and Taste – Contaminants from other than natural causes may not impart unpalatable flavor to fish, and may not result in offensive water odor or taste (organoleptic effects), or otherwise interfere with the designated and other attainable uses of a water body. Taste and odor-producing substances from other than natural origins shall not interfere with the production of a potable water supply by modem treatment methods.

E. Nuisance Conditions – Plant nutrients or other substances stimulating algal growth from other than natural causes shall not be present in concentrations that produce objectionable algal densities or nuisance aquatic vegetation, or that result in a dominance of nuisance species in stream, or that cause nuisance conditions in any other fashion. Phosphorus and nitrogen concentrations shall not be permitted to reach levels which result in man-induced eutrophication problems. As a guideline, total phosphorus shall not exceed 100 ug/liter in stream or 50 µg/liter in lakes and reservoirs, except in waters highly laden with natural silts or color which reduces the penetration of sunlight needed for plant photosynthesis, or in other waters where it can be demonstrated that algal production will not

interfere with or adversely affect designated and other attainable uses. Alternative or additional nutrient limitations for surface waters may be established by the PUEBLO OF SANDIA and incorporated into water quality management plans.

F. Pathogens – Surface waters shall be virtually free from pathogens. Waters used for irrigation of table crops (e.g., lettuce) shall be virtually free of Salmonella and Shigella species.

G. Turbidity – Turbidity attributable to other than natural causes shall not reduce light transmission to a point where aquatic biota are inhibited or alter color or visibility to a point that causes an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 NTU over background when background turbidity is 50 NTU or less, with no more than a 10 percent increase when background turbidity is more than 50 NTU. Background turbidity shall be measured at a point immediately upstream of the turbidity-causing activity.

H. Mixing Zones – Where effluent is discharged into surface waters, a continuous zone shall be maintained in which the water is of adequate quality to allow the migration of aquatic life with no significant effect on their population. The cross-sectional area of effluent mixing zones shall be ¼ or less than the cross-sectional area or flow volume of the receiving stream. Mixing zones are not allowed in lakes. Mixing zones containing permitted effluent shall not be at locations of recreational or ceremonial activities. Water quality standards shall be maintained throughout zones of passage. Zones of passage in intermittent streams may be designated on a site specific basis. The water quality in a zone of passage shall not be permitted to fall below the standards for the designated water body within which the zone is contained. With regard to toxicity in mixing zones, see Subsection 111 (O), below.

I. Radioactive Materials Concentrations of gross alpha particle activity shall not exceed the concentration caused by naturally-occurring materials. The combined dissolved concentration of Radium-226 and Radium-228, and the concentration of Strontium-90 shall not exceed 5 picocuries per liter, and 8 picocuries per liter, respectively. Gross alpha particle concentrations, including Radium-226 but excluding radon and uranium, shall not exceed 15 picocuries per liter. Tritium concentration shall not exceed 20,000 picocuries per liter. The gross beta radiation concentration shall not exceed 50 picocuries per liter. The average annual concentration of beta particles and of photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year. Sources, special nuclear, and by-product materials as defined by the Atomic Energy Act of 1954 are excluded from this provision.

J. Temperature – The introduction of heat by other than natural causes shall not increase the temperature in a stream, outside a mixing zone, by more than 2.7PC (5"F), based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) outside the mixing zone. In lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.7'C (3OF) above that which existed before the addition of heat of artificial origin, based upon the average of temperatures taken from the surface to the bottom or surface to the bottom of the epilimnion (if stratified). The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. In no case shall man-introduced heat be permitted when the maximum temperature specified for the reach (2O0C168"F for coldwater aquatic life/fisheries and 32.2^{0}C/ 90°F for warmwater aquatic life/fisheries) would thereby be exceeded. Privately-owned lakes and reservoirs used in the process of cooling water for industrial purposes may be classified using a less stringent special-use standard for thermal components, provided, - however, that the water released from any such lake or reservoir into a stream system meets the water quality standards of the receiving stream. High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.

K. Salinity/Mineral Quality (Total Dissolved Solids, Chlorides, and Sulfates) – Existing mineral quality shall not be altered by municipal, industrial, and in stream activities, or other waste discharges so as to interfere with the designated or attainable uses for a water body. In no case shall an increase of more than 113 over naturally occurring salinity/mineral levels be permitted, nor shall

dischargers cause concentrations on streams with a domestic water supply use to exceed 250 mg/L for chlorides; 250 mg/L for sulfates; and 500 mg/L for total dissolved solids.

L. The pH of a stream or lake shall not be permitted to fluctuate in excess of 1.0 unit over a period of 24 hours for other than natural causes.

M. Dissolved Oxygen – If a surface body of water is capable of supporting aquatic life, the dissolved oxygen standard will be a minimum of 5 mg/l. Dissolved oxygen values can be lower if caused by - natural conditions and are not an impairment to the native aquatic life.

N. Nitrogen and Other Dissolved Gases – Surface water shall be free of nitrogen and other dissolved gases at levels above 110% saturation when this supersaturation is attributable to municipal, industrial, or other discharges.

O. Toxic Substances – 1. Toxic substances shall not be present in receiving waters in quantities that are toxic to human, animal plant, or aquatic life, or in quantities that interfere with the normal propagation, growth, and survival of the sensitive indigenous aquatic biota. Within the mixing zone, there shall be no acute toxicity. There shall be no chronic toxicity at the edge-of the mixing zone.

P. Biocriteria – All surface waters of the Pueblo of Sandia with an existing or attainable aquatic life/fishery use shall be assessed by comparison to the biological integrity of a "least impacted" or minimally impacted reference water to best represent the most natural condition for that surface waterbody within the Middle Rio Grande Basin and with similar hydrologic conditions. The biological integrity of the surface waters, as measured by multi-metric indices of benthic macroinvertebrates, fish, periphyton, or other appropriate indicators, shall not significantly differ from reference waters, taking into account variability. A significant adverse alteration of the biological integrity of the aquatic life/fishery constitutes a violation of these surface water quality standards. All wetlands within the reservation, which are not constructed wetlands (used for the repository or treatment system for wastes from human sources) are considered surface waters of the Pueblo of Sandia. It is the policy of the Pueblo of Sandia to protect wetlands because wetlands provide a variety of environmental benefits including wildlife habitat and recharge of groundwater. The Pueblo of Sandia will, through the use of multi-metric indices of benthic macroinvertebrates, fish, periphyton, or other appropriate wetland indicators ensure that the biological integrity of wetlands is maintained. Wetland integrity shall not significantly differ from reference wetlands, taking account variability. A significant adverse alteration of the biological integrity of wetlands at naturally occurring levels, within the natural range of variation for the individual wetlands and values of wetlands shall not occur.

Q. Sediment Quality – Man-made or man induced activities shall not result in sediment with contaminants at concentrations which are toxic if absorbed by aquatic biota, livestock, wildlife or man or in quantities that interfere with normal propagation, growth, and survival of the existing aquatic biota. The following chemicals listed in Table 1. serve as a guideline in order to identify a concentration that if discovered might cause unacceptable ecological risks for aquatic biota and would warrant further investigation into the source and assist in clean-up of existing sediment contamination. These numeric values will be incorporated as part of the Pueblo of Sandia's water quality monitoring program and are not intended to be used in the calculation of effluent limitations in NPDES permits at this time.

Numeric Criteria – chronic numeric standards for Wildlife Habitat Use: total mercury, total recoverable selenium, cyanide (weak acid dissociable), total chlorine residual, total DDT and metabolites, total PCB's, substances which bioaccumulate

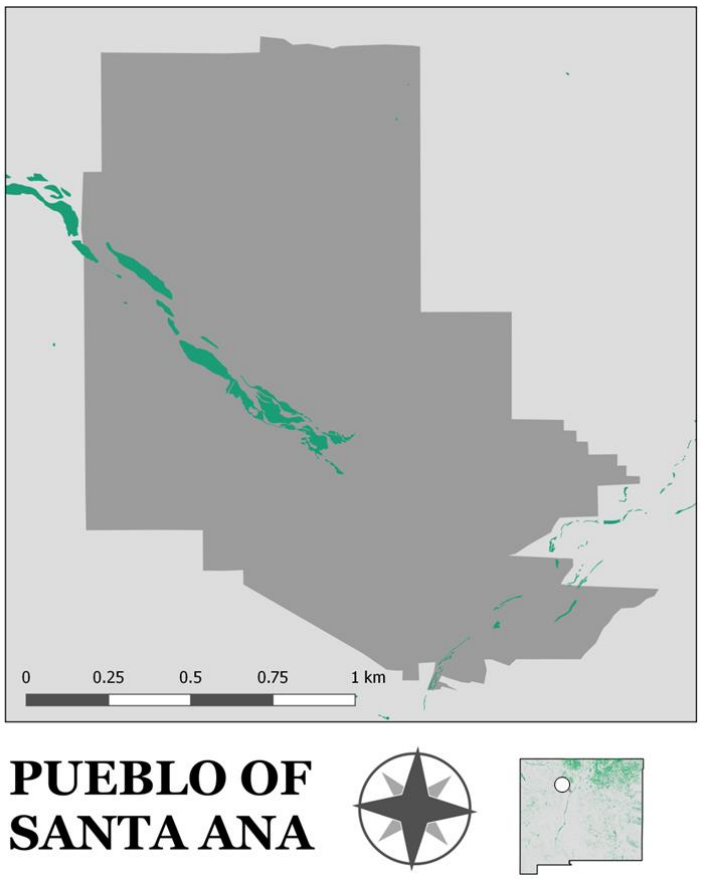
Standards for Wetlands and Pond – fecal coliform, Escherichia coli, dissolved oxygen (3 mg/l), temperature maximum (32.2^0C), pH (6.0-9.0), total ammonia, turbidity

Antidegradation – no wetland-specific language

Wetland Definition – 40 CFR §116.3 minus constructed wetlands

Pueblo of Santa Ana (NM)

The Pueblo of Santa Ana is located in northern New Mexico. Wetlands of the pueblo support the wildlife designated use. The wetland policy specifies impacts to wetlands that will be protected against. Narrative criteria include sediment quality (no toxic concentrations).



The Pueblo of Santa Ana has 1,124 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section IV. Water Body Uses and Standards Specific to the Uses

> G. Wildlife Habitat Use. Wildlife habitat use means surface waters of the Pueblo including wetlands that are suitable to support and propagate animal and plant species. Wildlife habitat will be free from any substances at concentrations that are toxic to or will adversely affect animal and plant species that use the environments for feeding, drinking, habitat or propagation, or can bioaccumulate and impair the community of animals in a watershed or the ecological integrity of surface waters of the Pueblo of Santa Ana.

Narrative Standard – Section III. General Standards

Surface waters of the Pueblo shall be free of any water contaminant in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of the property. The following narrative standards apply to all surface waters of the Pueblo of Santa Ana, unless stricter or additional standards or imposed in Sections IV and V below.

> A. Stream Bottom Deposits. Surface waters of the Pueblo shall be free from water contaminants from other than natural causes that may settle and have a deleterious effect on the aquatic biota or that will significantly alter the physical or chemical properties of the water or the bottom sediments.

B. Floating Solids, Oil, and Grease. Surface waters of the Pueblo shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances resulting from other than natural causes (including visible films of oil, globules of oil, grease, or solids in or on the water, stream bottom or coatings on stream banks or that would damage or impair the normal growth, function or reproduction of wildlife, plant or aquatic life). In addition to discharges that result in visible films of oil, oil and grease discharged into surface waters of the Pueblo shall not exceed 10 mg/liter average or 15 mg/liter maximum.

C. Color. Surface waters of the Pueblo shall be free from true color-producing materials from other than natural causes that create an aesthetically undesirable condition. Color shall not impair the designated and other attainable uses of a water body. Color-producing substances from other than natural sources are limited to concentrations equivalent to 70 color units (CU).

D. Odor and Taste. Contaminants from other than natural causes may not impart unpalatable flavor to fish, and may not result in offensive water odor or taste (organoleptic effects), or otherwise interfere with the designated and other attainable uses of a water body. Taste and odor-producing substances from other than natural origins shall not interfere with the production of a potable water supply by modern treatment methods.

E. Nuisance Conditions. Plant nutrients or other substances stimulating algal growth from other than natural causes shall not be present in concentrations that produce objectionable algal densities or nuisance aquatic vegetation, or that result in a dominance of nuisance species in stream, or that cause nuisance conditions in any other fashion. Phosphorus and nitrogen concentrations shall not be permitted to reach levels which result in man-induced eutrophication problems. As a guideline, total phosphorus shall not exceed 100 µg/liter in streams or 50 µg/liter in lakes and reservoirs. Alternative or additional nutrient limitations for s surface waters of the Pueblo may be established by the Pueblo of Santa Ana and incorporated into water quality management plans.

F. Pathogens. Surface waters of the Pueblo of Santa Ana shall be free of pathogens from other-than-natural causes in sufficient quantity to impair public health or the designated, existing uses of a surface water of the Pueblo of Santa Ana.

G. Turbidity. Turbidity attributable to other than natural causes shall not reduce light transmission to a point where aquatic biota are inhibited or alter color or visibility to a point that causes an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 NTU over background when background turbidity is 50 NTU or less, with no more than a 10 percent increase when background turbidity is more than 50 NTU.

H. Mixing Zones. Where effluent is discharged into surface waters of the Pueblo, a continuous zone shall be maintained in which the water is of adequate quality to allow the migration of aquatic life with no significant effect on their population. The cross-sectional area of effluent mixing zones shall be ¼ or less than the cross-sectional area or flow volume of the receiving stream. Mixing zones are not allowed in lakes. Mixing zones containing permitted effluent shall not overlap locations of recreational or ceremonial activities (See Section IV, below). Water quality standards shall be maintained throughout zones of passage. Zones of passage in intermittent streams may be designated on a site specific basis. The water quality in a zone of passage shall not be permitted to fall below the standards for the designated water body within which the zone is contained. With regard to toxicity in mixing zones, see Subsection III (O), below.

I. Radioactive Materials. Concentrations of gross alpha particle activity shall not exceed the concentration caused by naturally-occurring materials. Sources, special nuclear, and by-product materials as defined by the Atomic Energy Act of 1954 are excluded from this provision.

J. Temperature. The introduction of heat by other than natural causes shall not increase the temperature in a stream, outside a mixing zone, by more than 2.7°C (5°F), based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) outside the mixing zone. In lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.7°C (3°F) above that which existed before the addition of heat of artificial origin, based upon the average of temperatures taken from the surface to the bottom or surface to the bottom of the epilimnion (if stratified). The normal daily and seasonal

variations that were present before the addition of heat from other than natural sources shall be maintained. In no case shall man-introduced heat be permitted when the maximum temperature specified for the reach (25°C/77°F for coolwater aquatic life/fisheries and 32.2°C/ 90°F for warmwater aquatic life/fisheries) would thereby be exceeded. Privately-owned lakes and reservoirs used in the process of cooling water for industrial purposes may be classified using a less stringent special-use standard for thermal components, provided, however, that the water released from any such lake or reservoir into a stream system meets the water quality standards of the receiving stream.

K. Salinity/Mineral Quality (Total Dissolved Solids, Chlorides, and Sulfates) Existing mineral quality shall not be altered by municipal, industrial, and in stream activities, or other waste discharges so as to interfere with the designated or attainable uses for a water body. In no case shall an increase of more than 1/3 over naturally-occurring salinity/mineral levels be permitted, nor shall dischargers cause concentrations on streams with a domestic water supply use to exceed 250 mg/L for chlorides; 250 mg/L for sulfates; and 500 mg/L for total dissolved solids.

L. pH. The pH of a stream or lake shall not be permitted to fluctuate in excess of 1.0 unit over a period of 24 hours for other than natural causes.

M. Dissolved Oxygen. If a surface body of water is capable of supporting aquatic life, the dissolved oxygen standard will be a minimum of 5 mg/l. Dissolved oxygen values can be lower if caused by natural conditions and not an impairment to the native aquatic life.

N. Nitrogen and Other Dissolved Gases. Surface waters of the Pueblo shall be free of nitrogen and other dissolved gases at levels above 110% saturation when this supersaturation is attributable to municipal, industrial, or other discharges.

O. Toxic Substances Toxic substances shall not be present in receiving waters in quantities that are toxic to human, animal, plant, or aquatic life, or in quantities that interfere with the normal propagation, growth, and survival of the sensitive indigenous aquatic biota. Within the mixing zone, there shall be no acute toxicity. There shall be no chronic toxicity at the edge of the mixing zone. Water quality criteria for toxic substances in surface waters of the Pueblo with primary contact, aquatic life uses, domestic water supply use, or from which fish are caught for human consumption are found in Appendix A. The temperature and pH-dependent values for the ammonia criteria for aquatic life uses are designated in Appendix B.

P. Biocriteria. Biological integrity, the protection of aquatic communities in their most natural condition, shall be protected and maintained through this narrative statement. Biocriteria, including sampling of aquatic communities and the use of multi-metric indices, will be applied to protect all categories of waters with an aquatic life use. The application of biological criteria will be based on the requirement that the biological integrity of waters impacted by point source pollution, non-point source pollution, and other anthropogenic factors will not be significantly impaired when compared to least impacted watersheds that are otherwise similar in their characteristics. The biological community structure, function, and habitat of waters shall be restored to and/or protected and maintained at the highest potential use. Reference locations will be selected representing natural conditions in which indigenous aquatic communities are healthy and can reproduce fertile offspring. The biological integrity of the surface waters of the Pueblo, as measured by multi-metric indices of benthic macroinvertebrates, fish, periphyton, or other appropriate indicators, shall not significantly differ from reference waters, taking into account variability. A significant adverse alteration of the biological integrity of the waters constitutes a violation of these water quality standards.

Q. Sediment Quality. Man-made or man induced activities shall not result in sediment with contaminants at concentrations which are toxic if absorbed by aquatic biota, livestock, wildlife or man or in quantities that interfere with normal propagation, growth, and survival of the existing aquatic biota. The chemicals listed in Table III: Q-1 serve as a guideline in order to identify a concentration that if discovered might cause unacceptable ecological risks for aquatic biota and would warrant further investigation into the source and assist in clean-up of existing sediment contamination. These numeric values will be incorporated as part of the Pueblo of Santa Ana's water quality monitoring program and are not intended to be used in the calculation of effluent limitations in NPDES permits at this time.

[Table III: Q-1 has limits for arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc, PAH's and PCB's.]

Antidegradation – no wetland-specific language, rules require the Pueblo to designate streams as perennial, ephemeral, or intermittent and determine numeric low flows.

Wetland Definition – 40 CFR §116.3 minus constructed wetlands

Wetland Policy – Section I. D. Wetlands

All wetlands within the reservation, with the exception of wetlands constructed for the repository or treatment of wastes from human sources, are considered surface waters of the Pueblo. All wetlands will be held to the standards necessary to support the biological and physical characteristics naturally present within wetlands. Wetlands will be protected to prevent significant adverse impacts on:

Water flow and circulation, erosion, or sedimentation patterns;

Natural water temperature variations;

The chemical, nutrient and dissolved oxygen regime of the wetland;

The normal movement of aquatic fauna;

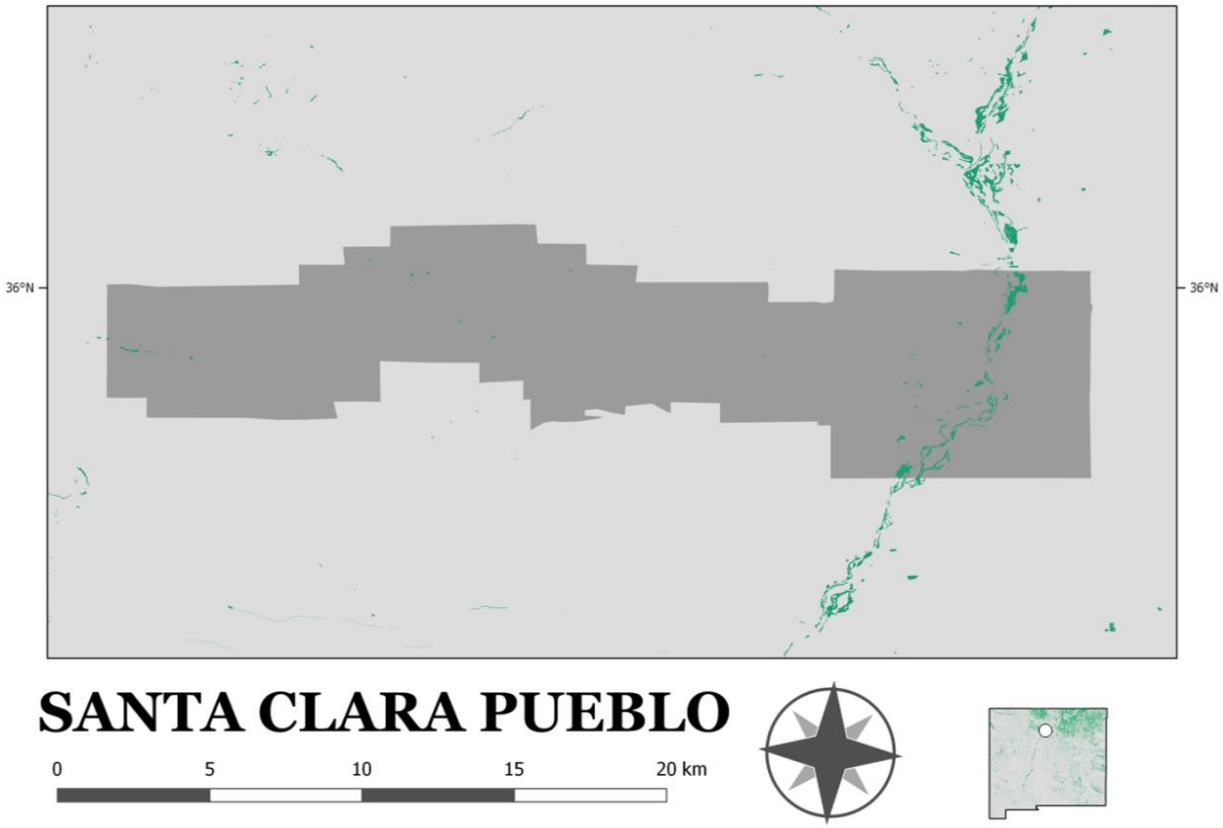
The pH of the wetland; and

Normal water levels or elevations

Intermittent and Ephemeral Streams [Section I.H Applicability of Uses] – The rivers, streams, and arroyos of the Pueblo of Santa Ana are all intermittent or ephemeral, with the exception of the Rio Grande. When ephemeral and intermittent streams have a low flow value of zero, all flows shall meet standards for the designated uses.

Santa Clara Pueblo (NM)

The Santa Clara Pueblo is located in northern New Mexico. Wetlands along rivers in the pueblo hold the same uses as the river, wetlands near ephemeral streams hold the same uses as streams, also specify uses that apply to all wetlands. Narrative standard includes hydrologic criteria (water flow, temperature, chemical regime, migration, pH, elevation). The pueblo will establish nutrient criteria for all waterbodies but wetlands. Antidegradation rules specify no impacts to wetlands. Code defines wetland functions to protect.



Santa Clara Pueblo has 408 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses –Section V. Stream Use Designations

Fish culture (Santa Clara Creek wetlands)

High quality cold water fishery (Santa Clara Creek wetlands)

Marginal cold water fishery (lower Santa Clara Creek, Rio Grande, Rio Santa Cruz wetlands)

Warm water fishery (all wetlands, lower Santa Clara Creek, Rio Grande, Rio Santa Cruz wetlands)

Irrigation (upper and lower Santa Clara Creek, Rio Grande, Rio Santa Cruz wetlands)

Livestock and wildlife (all wetlands, upper and lower Santa Clara Creek, Rio Grande, Rio Santa Cruz wetlands, intermittent and ephemeral streams and their wetlands)

Ground water recharge (all wetlands, upper and lower Santa Clara Creek, Rio Grande, Rio Santa Cruz wetlands, intermittent and ephemeral streams and their wetlands)

Domestic (Santa Clara Creek wetlands)

Municipal and industrial water supply (Santa Clara Creek wetlands)

Primary contact (all wetlands, lower Santa Clara Creek, Rio Grande, Rio Santa Cruz wetlands intermittent and ephemeral streams and their wetlands)

Narrative Standard – Section III. General Standards

Tribal waters shall be free of any water contaminant in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property. In addition, the following narrative standards apply to all Tribal Waters, including wetlands, unless stricter standards are imposed in Sections IV and/or V.

A. Stream Bottom Deposits. All tribal waters shall be free from water contaminants from other than natural causes that will settle and cause deleterious effects to the aquatic biota or significantly alter the physical or chemical properties of the water or bottom deposits.

B. Floating Solids, Oil, and Grease. All tribal waters shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances resulting from other than natural causes including but not limited to visible films of oil, globules of oil, grease or solids in or on the waters, or coatings on stream banks.

C. Color. Materials producing true color resulting from other than natural causes shall not create an aesthetically undesirable condition; nor shall color impair the attainable uses of the water or harm aquatic life.

D. Odor and Taste. Water contaminants from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish, result in offensive odor or taste arising from the water, or otherwise interfere with the existing and attainable uses of the water, nor shall taste and odor-producing substances of other than natural origin interfere with the production of a potable water supply by modern treatment methods.

E. Nuisance Conditions. Plant nutrients or other substances stimulating algal growth from other than natural causes shall not be present in concentrations that will produce objectionable algal densities, or nuisance aquatic vegetation, result in a dominance of nuisance species instream, or otherwise cause nuisance conditions. When stricter requirements are not established elsewhere in this Code, dissolved oxygen shall be no less than 2 mg/liter in order to prevent nuisance conditions from other than natural causes. Phosphorus and nitrogen concentrations shall not be increased to levels that result in man-induced eutrophication problems. The Tribal Council may establish nutrient limitation for lakes, reservoirs, and streams and shall incorporate such limitations into appropriate water quality management plans.

F. Pathogens. Tribal waters shall be virtually free from pathogens which includes bacteria, viruses or parasites. In particular, waters used for irrigation of table crops such as lettuce shall be virtually free of Salmonella and Shigella species.

G. Turbidity. Turbidity attributable to other than natural causes shall not reduce light transmission to the point that aquatic biota is inhibited or that will cause an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 NTU over background when background turbidity is 50 NTU or less; there shall not be more than a 10% increase in turbidity when background turbidity is more than 50 NTU.

H. Mixing Zones. In any perennial waters receiving a waste discharge, a continuous zone shall be maintained where the water is of adequate quality to allow the migration of aquatic life with no significant effect on their population. The size of a mixing zone shall generally be less than one-third of the cross-sectional area or one-third of critical low flow (4Q3) conditions of the receiving stream. At flows greater than the 4Q3 value, the size of the mixing zone will be a smaller proportion of than the above limitation. In intermittent or ephemeral streams, discharges shall meet all applicable numeric and narrative criteria at the point of discharge. [...]

I. Radioactive Materials. The radioactivity of surface water shall not exceed the maximum natural background concentration in Tribal Waters.

J. Temperature. The introduction of heat by other than natural causes shall not increase the temperature outside the mixing zone by more than 2.7^0C (5^0F) in a stream, based upon the monthly

average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) outside the mixing zone. In lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.7^0C (3^0F) above that which existed before the addition of heat or artificial origin, based upon the average of temperatures taken from the surface to the bottom, or surface to the bottom of the epilimnion (if stratified). The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. In no case shall heat of artificial origin be permitted when the maximum temperature specified for the reach [...] would thereby be exceeded. High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.

K. Salinity/Mineral Quality (total dissolved solids, chlorides, and sulfates). Existing mineral quality shall not be altered by municipal, industrial, or instream activities, or other wastes discharges so as to interfere with designated uses for a water body. No increase exceeding naturally-occurring levels by greater than one-third shall be permitted. Numeric criteria for chlorides at 250 mg/L, for sulfates at 250 mg/L and for total dissolved solids at 500 mg/L shall not be exceeded.

L. pH. The pH of a stream or a lake shall not fluctuate in excess of 1.0 pH unit over a period of 24 hours for other than natural causes.

M. Dissolved oxygen. If a water body is capable of supporting aquatic life, the dissolved oxygen standard will be a minimum of 5 mg/L.

N. Dissolved gases. Surface water shall be free of nitrogen and other dissolved gases at levels about 110% saturation when this supersaturation is attributable to municipal, industrial, or other discharges.

O. Biological criteria. Tribal waters shall be free from activities that would impair the biological community as it naturally occurs due to physical, chemical and hydrologic conditions. Tribal waters shall support and maintain a balanced, integrated, and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region. Differences from appropriate reference site or ecoregion conditions shall be limited to non-detrimental differences in community structure and function.

P. Hydrologic criteria. Natural hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands within Santa Clara boundaries shall be protected to prevent significant adverse impacts on:

1. Water flow and circulation, erosion, or sedimentation patterns
2. Natural water temperature variations.
3. The chemical, nutrient and dissolved oxygen regime of the wetland.
4. The normal movement of aquatic fauna.
5. The pH of the wetland.
6. Normal water levels or elevations.

Q. Toxic substances.

1. Toxic substances, including but not limited to pesticides, herbicides, heavy metals, and organic chemicals, shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant, or aquatic life, or to interfere with the normal propagation, growth, and survival of the indigenous aquatic biota. There shall be no acute toxicity. At the edge of the mixing zone there shall be no chronic toxicity. [...]

Antidegradation – (A.5.) Degradation of tribal waters through direct, indirect, or cumulative impacts shall not result in the net loss of wetland acreage or wetland functions.

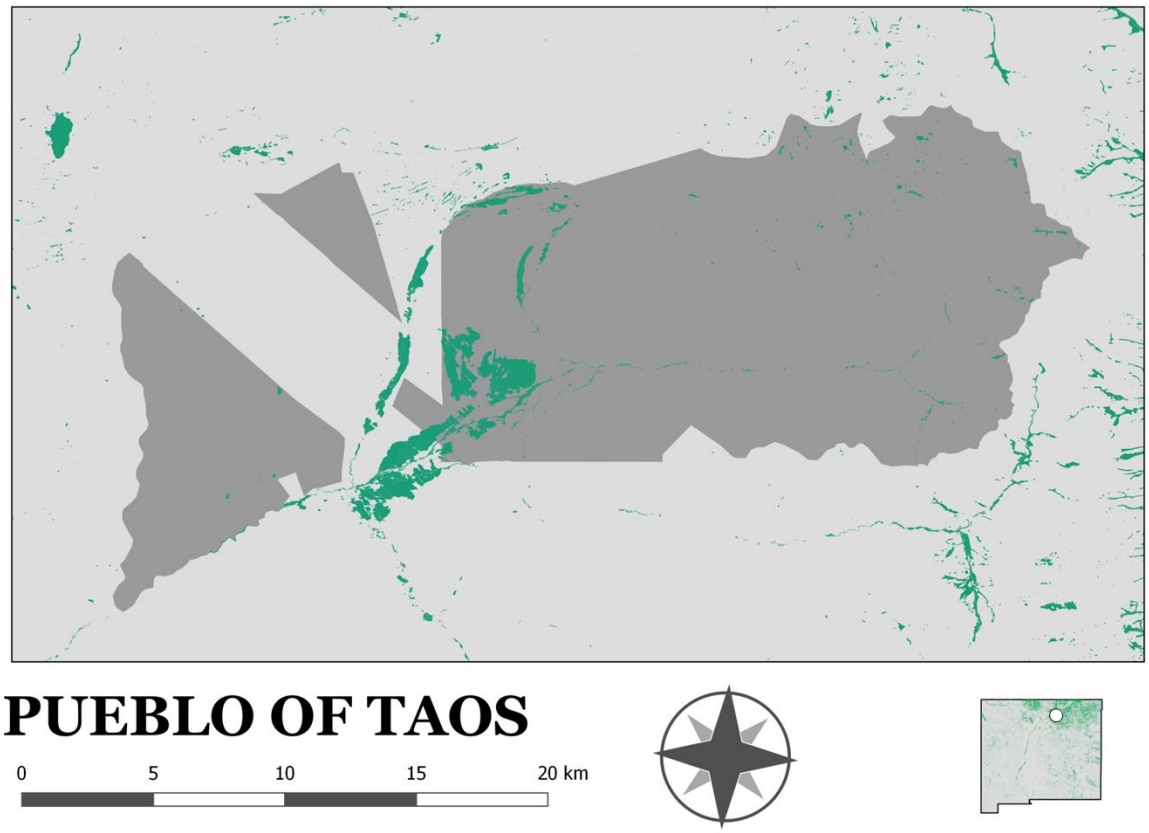
Wetland Definition – 40 CFR §116.3 minus constructed wetlands

Definitions – "Wetland functions" May include, but are not limited to: food chain production; habitat for nesting, spawning, rearing and resting for wetland and terrestrial species; ground water exchange, discharge and recharge; nutrient transport, removal or transformation; sediment and or contaminant

retention; water storage; storm and flood water retention and or attenuation; sediment stabilization; recreation; education and research; and habitat for threatened or endangered species.

Pueblo of Taos (NM)

The Pueblo of Taos is located in northern New Mexico. The wetland policy of the pueblo is listed within the narrative standard. Sandflats and mudflats considered Pueblo waters. Water quality standards will not supersede or impair water rights. Wetlands goal to maintain water quality at natural background levels, pollutant levels based on protecting existing uses.



The Pueblo of Taos has 2,863 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section IV. Designated Uses. C. Designated Use Table:

Drinking Water

Domestic Supply (incl. Groundwater Recharge)

Wildlife Habitat

Irrigation

Livestock and Wildlife Watering

Aquatic Life (Acute & Chronic Criteria)

Primary Human Contact/Ceremonial Use

Narrative Standard – Section III. Narrative Water Quality Standards

A. General Standards. The general standards apply to all Pueblo waters. General standards include industrial, recreation, and secondary contact uses. Pueblo waters shall be free from pollution, in such quantity and of such duration as may, with reasonable probability:

1. Injure or otherwise adversely affect human health, public safety, or public welfare;

2. Injure or otherwise adversely affect the habitation, growth, or propagation of indigenous aquatic plant and animal communities or any member of these communities; of any desirable

non-indigenous member of these communities; of waterfowl accessing the water body; or adversely affect the physical, chemical, or biological conditions on which these communities and their members depend;

3. Settle to form bottom deposits that cause deleterious effects to the habitation, growth, or propagation of indigenous aquatic biota; of any desirable non-indigenous aquatic biota; of waterfowl accessing the water body; or otherwise adversely affect the physical, chemical, or biological properties of the bottom on which these biota depend;

4. Cause physical, chemical, or biological conditions that promote the habitation, growth, or propagation of undesirable, non-indigenous species of plant or animal life in the water body;

5. Cause solids, oils, scum, foam, grease, or other objectionable floating materials and suspended substances of a persistent nature on the surface of the water body, including a film or iridescence, or cause a deposit on a shoreline, bank, or on aquatic vegetation;

6. Cause objectionable taste, odor, color, or turbidity in the water body;

7. Cause objectionable taste in edible plant and animal life, including waterfowl, that reside in, on, or adjacent to the water body.

B. Temperature. Normal seasonal variations of temperature in surface waters shall be maintained. Maximum temperatures for each stream reach have been specified in the Appendices. However, the introduction of heat by other than natural causes shall not increase the temperature, as measured upstream from the point of introduction, by more than 5°F (2.7°C) in a stream or more than 3°F (1.7°C) in a reservoir or lake. High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.

C. Minerals. Existing mineral content of the Pueblo's waters shall not be altered by municipal, industrial, or in-stream activities or other waste discharges so as to interfere with the designated uses. In all cases, increases exceeding 113 over naturally occurring levels will not be allowed. Numeric values for chlorides at 230 mg/L, for sulfates at 250 mg/L, and for total dissolved solids at 500 mg/L shall not be exceeded.

D. Determining Compliance with Narrative Standards. [...]

E. Biological Criteria. Biological integrity, the protection of aquatic communities in their most natural condition, shall be protected and maintained through this narrative statement. Biocriteria, including sampling of aquatic communities and the use of multi-metric indices, will be applied to protect all categories of waters with an aquatic life use. The application of biological criteria will be based on the requirement that the biological integrity of waters impacted by point source pollution, nonpoint source pollution, and other anthropogenic factors will not be significantly impaired when compared to least impacted watersheds that are otherwise similar in their characteristics. The biological community structure, function, and habitat of waters shall be restored to and/or protected and maintained at the highest potential use. Reference locations will be selected representing natural conditions in which indigenous aquatic communities are healthy and can reproduce fertile offspring. The conditions at reference and other locations will be assessed by consistent sampling and reliable measures of selected indicative aquatic communities (e.g., benthic macroinvertebrate, fish, algal) established by the Environment Office; chemical, physical, toxicological, and microbial water quality measurements may also be taken.

F. Mixing Zones. In any perennial waters receiving waste discharge, a continuous zone must be maintained where the water is of adequate quality to allow the migration of wildlife and which meets all water quality standards. Point source discharges are not allowed under any circumstances for waters designated under the Wild and Scenic Rivers Act or within lands designated as Wilderness, pursuant to applicable statutory authority. [...]

G. Wetlands. All wetlands on the reservation which are not constructed wetlands are considered "Pueblo waters". Wetlands shall be subject to narrative criteria and applicable antidegradation provisions unless site-specific numerical criteria have been assigned. Constructed wetlands shall only be subject to narrative criteria. Wetlands are generally assumed to provide habitat capable of supporting aquatic biota (e.g., fish, macroinvertebrates, amphibians, or hydrophytic vegetation) on a

regular or periodic basis. It shall be a goal of the Pueblo to maintain the water quality of wetlands at natural background levels, within the natural range of variation for the particular wetland. For substances that are not naturally occurring, water quality requirements shall be based upon protecting existing uses of the wetland consistent with antidegradation requirements, the Pueblo's narrative water quality criteria, or appropriate criteria guidance issued by the U.S. Environmental Protection Agency. Natural wetlands shall not be considered as repositories or treatment systems for wastes from human sources.

Antidegradation – nothing wetland-specific, require Pueblo to designate streams as perennial, ephemeral, or intermittent and determine numeric low flows.

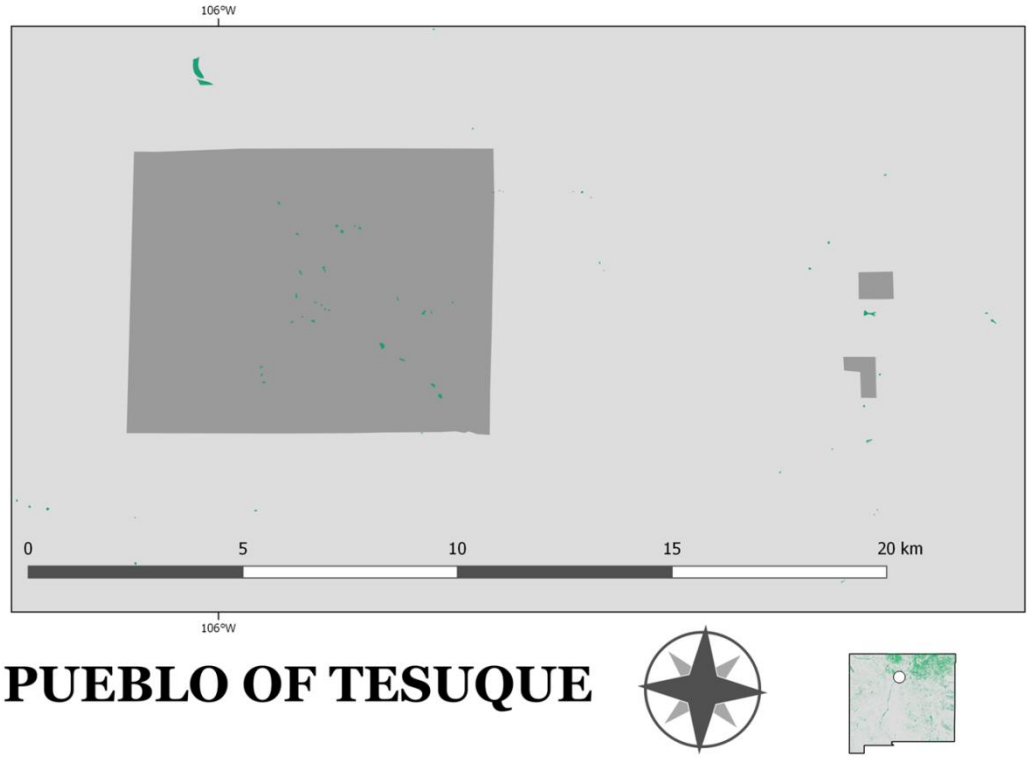
Wetland Definition – 40 CFR §116.3 minus constructed wetlands

Definitions – "Pueblo Waters": All waters situated wholly within, partly within, or bordering upon the Reservation, excluding those that do not combine with other surface or sub-surface waters, such as stock tanks, treatment lagoons, or reservoirs. However, receiving waters impacted by the effluent from such reservoirs and treatment lagoons are included. Other examples of Pueblo Waters include, but are not limited to, portions of rivers, streams (perennial, intermittent and ephemeral streams and their tributaries), lakes, ponds, dry washes, marshes, waterways, wetlands, mudflats, sandflats, sloughs, impoundments, riparian areas, springs, and all other bodies or accumulations of surface water, natural or artificial, public or private, including those dry part of the year.

Water Rights (Section 1.I) – The right of the Pueblo to certain quantities of water and the authority of the Pueblo to allocate quantities of water within its jurisdiction shall not be superseded, abrogated, or otherwise impaired by these Standards. The Pueblo will cooperate with federal and state agencies to prevent, reduce, and eliminate water pollution in coordination with programs for managing water resources.

Pueblo of Tesuque (NM)

The Pueblo of Tesuque is located in northern New Mexico. Wetlands in the pueblo have the same use as associated waterbodies. Narrative pH criteria is range-based (not more than 1.0 unit fluctuation over 24 hours). Water flow narrative criteria covers erosion control, irrigation return flow, and minimal flow for protecting uses.



The Pueblo of Tesuque has 22 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section IV. Water Body uses and Specific Standards:

Fish Culture (rivers and perennial tributaries)

Warm Water Fishery (rivers and perennial tributaries)

Irrigation (rivers and perennial tributaries)

Livestock Watering and Wildlife Habitat (rivers and perennial tributaries, intermittent and ephemeral)

Primary Contact (rivers and perennial tributaries, intermittent and ephemeral)

Groundwater Recharge (rivers and perennial tributaries)

Narrative Standard – Section III. General Standards

Watercourses shall be free of any water contaminant in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property. In addition, the following narrative standards apply to all Tribal Waters, unless stricter standards are imposed in Section IV of this Code:

A. Stream Bottom Deposits. The stream shall be free from water contaminants from other than natural causes that will settle and cause deleterious effects to the aquatic biota or significantly alter the physical or chemical properties of the bottom.

B. Floating Solids, Oil, and Grease. All waters shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes which could damage or impair the normal growth, function or reproduction of human animal, plant or aquatic life (including visible films of oil, globules of oil, grease, or solids in or on the water, or coatings on stream banks).

C. Color. Materials producing true color resulting from other than natural causes shall not create an aesthetically undesirable condition; nor should color impair the attainable uses of the water or harm aquatic life.

D. Odor and Taste. Water contaminants from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish, or result in offensive odor or taste arising from the water, or otherwise interfere with the existing and attainable uses of the water, nor shall taste and odor-producing substances of other than natural origin interfere with the production of a potable water supply by modem treatment methods.

E. Nuisance Conditions. Plant nutrients or other substances stimulating algal growth from other than natural causes shall not be present in concentrations that will produce objectionable algal densities, nuisance aquatic vegetation, result in a dominance of nuisance species instream, or otherwise cause nuisance conditions. When stricter requirements are not established elsewhere in this Code, the dissolved oxygen shall be maintained at 2 milligrams per liter ("mg/L") in order to prevent nuisance conditions from other than natural causes. The phosphorus and nitrogen concentrations shall not be increased to levels that result in man induced eutrophication problems. The Tribal Council may establish nutrient limitation for lakes, reservoirs, and streams, and shall incorporate such limitations into appropriate water quality management plans.

F. Pathogens. Streams shall be virtually free from pathogens including bacteria, viruses, or parasites. In particular, waters used for irrigation of table crops such as lettuce shall be virtually free of Salmonella and Shigella species.

G. Turbidity. Turbidity attributable to other than natural causes shall not reduce light transmission to the point that the aquatic biota is inhibited or that will cause an unaesthetic and substantial visible contrast with the natural appearance of the water. Turbidity attributable to natural causes or the reasonable operation of irrigation and flood control facilities is not subject to these standards. Specifically, turbidity shall not exceed 5 Nephelometric Turbidity Units ("NTU") over background when background turbidity is 50 NTU or less; there shall not be more than a 10% increase in turbidity when background turbidity is more than 50 NTU.

H. Mixing Zones. The size of mixing zones shall be less than 1/3 of the cross-sectional area or the critical stream flow at or above 4Q3 conditions of the receiving stream. In intermittent or ephemeral streams, discharges shall meet all applicable numeric and narrative criteria at the point of discharge. There shall be no acute toxicity in the mixing zone. Numeric acute criteria shall be attained at the point of discharge. There shall be no chronic toxicity at the edge of the mixing zone. Numeric chronic criteria shall be attained at the edge of the mixing zone. Mixing zones are not allowed for discharges to publicly owned lakes or reservoirs; these effluents shall meet all applicable numeric and narrative criteria at the point of discharge. Mixing zones shall not overlap ceremonial or recreational sites. Requirements for mixing zones shall be consistent with those established in other regulations such as water quality management plans and implementation plans developed by the Pueblo or by the EPA. In any waters receiving a waste discharge, a continuous zone must be maintained where the water is of adequate quality to allow the migration of aquatic life with no significant effect on their population.

I. Radioactivity. Except as otherwise provided in this Code, the radioactivity of surface water shall be maintained at concentrations which do not exceed the maximum natural background concentrations in surface waters of the Pueblo.

J. Temperature. The introduction of heat by other than natural causes shall not increase the temperature, outside the mixing zone, by more than 2.7^0C (5^0F) in a stream, based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) outside the mixing zone. In lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.70^0C (3^0F) above that which existed before the

addition of heat of artificial origin, based upon the average of temperatures taken from the surface to the bottom or surface to the bottom of the epilimnion (if stratified). The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. In no case shall man-introduced heat be permitted when the maximum temperature specified for the reach (20^0C/68° F for cold water fisheries and 32.2^0C/90^0F for warm water fisheries) would thereby be exceeded. High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.

K. Salinity/Mineral Quality. (total dissolved solids ("TDS"), chlorides, and sulfates). Existing mineral quality shall not be altered by municipal, industrial, or instream activities or other waste discharges so as to interfere with the designated uses. No increase exceeding 1/3 over naturally occurring levels may be permitted. Numeric criteria for chlorides at 230 mg/L, for sulfates at 250 mg/L, and for TDS at 500 mg/L shall not be exceeded.

L. pH Range. The pH of a stream or a lake shall not fluctuate in excess of 1.0 pH unit over a period of 24 hours for other than natural causes.

M. Dissolved Oxygen. If the stream is capable of supporting aquatic life, the dissolved oxygen standard shall not be less than 5 mg/L.

N. Dissolved Gases. Surface water shall be free of nitrogen and other dissolved gases at levels above 110%saturation when this super-saturation is attributable to municipal, industrial, or other discharges.

O. Toxic Substances. Toxic substances, including but not limited to pesticides, herbicides, heavy metals, and organic solvents, shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant, or aquatic life or as to interfere with the normal propagation, growth, and survival of the sensitive indigenous aquatic biota. [...]

P. Water Flow. In order to improve controls over nonpoint sources of pollution, Tribal, Federal, State and local resource management agencies will be encouraged and assisted to coordinate planning and implementation of programs to regulate or control runoff, erosion, turbidity, stream temperature, stream flow, and the withdrawal and use of irrigation water on a watershed scale to protect the quality and beneficial uses of water and related resources. Such programs may include, but are not limited to, the following:

a) Development of projects for storage and release of suitable quality waters to augment low-stream flow;

b) Runoff control to reduce erosion;

c) Possible modification of irrigation practices to reduce or minimize adverse impacts from irrigation return flows;

d) Stream bank erosion reduction projects;

e) Federal water quality restoration plans; and

f) Possible modification in snowmaking practices to reduce or minimize adverse impacts from snow melting return flows.

The Rio Tesuque shall be retained with minimal base flows of 1.0 c.f.s., which is the minimal flow necessary to provide for preservation of wildlife, fish, scenic, aesthetic, cultural and other environmental values, and navigational values. Lakes and ponds shall be retained substantially in their natural condition. Withdrawals of water which would conflict therewith shall be authorized only in those situations where it is clear that overriding consideration of the public interest will be served. Federal, State, local tribal governments, individuals, corporations, groups, acequia associations, and other entities shall be encouraged to carry out practices of conservation as they relate to the use of Tribal waters. In addition to traditional development approaches, improved water use efficiency and conservation shall be emphasized in the management of Tribal waters and in some cases will be a potential new source of water with which to meet future needs throughout the Reservation.

Antidegradation – implementation requires determining wetland acreage impacts.

Wetland Definition – 40 CFR §116.3 minus constructed wetlands

Definitions –Nuisance condition: A condition involving uncontrolled growth of aquatic plants, usually caused by excessive nutrients in the water.

Ephemeral and Intermittent waters. The general standards in Section III of this Code shall be maintained at all times and apply to all streams, lakes, reservoirs, canals, drains, ponds, springs, and wetlands, whether they are perennial, ephemeral, or intermittent water bodies. Numeric criteria particular to a use shall be maintained any time the flow equals or exceeds the four-day three-year low flow value ("4Q3").

Saint Regis Mohawk Tribe (NY)

Wetlands subject to the narrative standard and tribal Wetland Protection Plan. Within the general conditions of the water quality standards, the wetland policy is to maintain the natural water quality of wetlands and maintain the hydrological and physical condition of wetlands.

The Saint Regis Mohawk reservation has 2,376 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section V. Water Body Classifications and Standards Specific to Uses:

[*waters classified by groups of uses, guess Class B and C might be appropriate for wetlands*]

6. Class B. The designated uses for Class B waters include: primary and secondary contact recreation, ceremonial use, fish, shellfish and wildlife propagation and survival, and fishing.

7. Class C. The designated uses for Class C waters include: primary and secondary contact recreation, ceremonial use, and fish, shellfish and wildlife propagation and survival, and fishing.

Narrative Standard – Section IV General Conditions – B. General Narrative and Numeric Criteria

The following Narrative Criteria apply to all Tribal Surface Waters of the Saint Regis Mohawk Tribe, including intermittent streams and within designated mixing zones..

1. Suspended, colloidal and settleable solids: Tribal surface waters shall be free from suspended, colloidal and settleable solids that will cause deposition or impair the waters for their designated uses.

2. Oil, grease and any floating substances: Tribal Surface Waters shall be free from oil and grease, including visible oil film and globules of oil.

3. Color: Tribal Surface Waters shall be free from substances that will adversely affect the color or impair the water of their designated uses. Color-producing substances from other than natural sources are limited to concentrations equivalent to 15 color units (CU).

4. Odor and Taste: Tribal Surface Waters shall be free from substances that will adversely affect the taste, odor thereof, or impair the water of their designated uses.

5. Nitrogen and Phosphorus: Tribal Surface Waters shall be free from nutrients in concentrations that will result in growths of algae, weeds and slimes that will impair their designated uses.

6. Pathogens: Designated Uses of Tribal Surface Waters shall not be impaired by pathogens, as measured by Pathogen Indicator Bacteria, pursuant to SRMT swimming and bathing criteria in Section VI(A). 23

7. Turbidity: Turbidity attributable to other than natural causes, shall not reduce light transmission to a point that causes an unaesthetic and substantial visible contrast with the natural appearance of the water.

8. Temperature Thermal discharge: The introduction of heat by other than natural causes shall not increase the temperature in a stream, outside a mixing zone, by more than 2.7°C (5°F), based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) outside the mixing zone. The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. In no case shall man-introduced heat be permitted when the maximum temperature specified for the reach (20°C/68°F for cold water fisheries and 32.2°C/90°F for warm water fisheries) would thereby be exceeded.

a. Exclusions. Privately owned ponds that do not combine with other Tribal Surface Waters are exempt from this thermal discharge standard. However, waters released from any such pond into a stream or river must meet Tribal Water Quality Standards of the receiving water body.

9. Salinity/Mineral Quality (total dissolved solids, chlorides, and sulfates): Existing mineral quality shall not be altered by municipal, industrial, and instream activities, or other waste discharges so as to interfere with the designated uses for a water body. An increase of more than 1/3 over naturally-occurring levels shall not be permitted. In no case shall dischargers cause concentrations in rivers with a domestic water supply use to exceed 250 mg/l of chlorides, 250 mg/l sulfates and 500 mg/l total dissolved solids.

10. pH: The pH of Tribal Surface Waters shall not be permitted to fluctuate in excess of 1.0 unit over a period of 24 hours for other than natural causes or outside the range 6.5 – 8.5

11. Garbage, cinders, ashes, sludge, concrete wash and other refuse: Tribal Surface waters shall be free of these items in any amount.

12. Dissolved Oxygen: The DO standard for the protection of aquatic life in surface waters shall not be less than a daily average of 6.0 mg/l, and at no time less than 5.0. For water bodies used as spawning habitat by cold water fishes (e.g. salmonids) the DO standard shall be no less than 7.0 mg/l from other than natural conditions.

13. Flow: There shall be no alteration of flow that will impair the waters for their designated uses.

14. Radioactivity: The Radioactivity should be kept at the lowest practicable levels, and in any event should be controlled to the extent necessary to prevent harmful effects on health. Item 2

Antidegradation – no wetland-specific language

c. Maintaining substrate characteristics necessary to support existing and designated uses.

4. Point and Nonpoint sources of pollution shall not cause destruction or impairment of wetlands except where authorized under Section 404 of the CWA.

5. Natural wetlands shall not be used as repositories or treatment systems for wastes from human sources.

Wetland Definition – none

Definitions –Tribal Surface Water: all water above the surface of the ground situated wholly or partly within or bordering upon the exterior boundaries of the Territory, including but not limited to lakes, ponds, artificial impoundments, streams, stream reaches, rivers, springs, seeps, and wetlands.

Section IV. F. Wetlands:

1. All wetlands within the exterior boundaries of the territory that are not constructed wetlands shall be subject to the Narrative Criteria (Section IV, subsection 2), Antidegradation (section 2) and the Saint Regis Mohawk Tribe Wetlands Protection Plan.

2. Water quality in wetlands shall be maintained at naturally occurring levels, within the natural range of variation for the individual wetland, unless otherwise specified and approved by the Environment Division.

3. Physical and biological characteristics shall be maintained and protected by:

a. Maintaining hydrological conditions, including hydroperiod, hydrodynamics, and natural water temperature variations;

b. Maintaining the natural hydrophytic vegetation;

Wetland Protection Policy *– separate from water quality standards, describes the types of wetlands on the reservation, the functions wetlands provide, and recommendations that should be part of the total planning process.*

1. Establish a Citizens' Advisory Committee

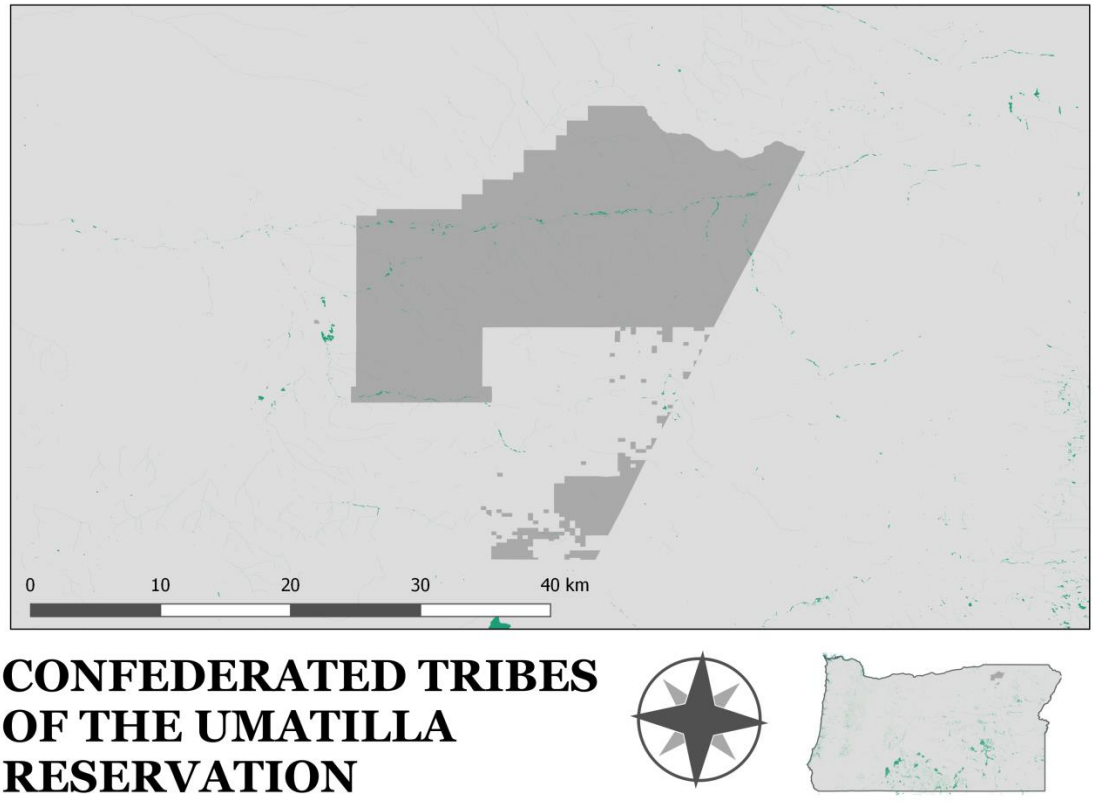
2. Creation of a Tribal Environmental Protection Ordinance

3. Creation of "Forever Wild" Areas.

4. Educational Outreach

Confederated Tribes of the Umatilla Reservation (OR)

The Umatilla Reservation is location in northeastern Oregon. Uses of Waters of the Umatilla Reservation are established by watershed, not waterbody. The tribes have a wetland policy that states the Antidegradation Policy, Toxic and Narrative Criteria all apply to wetlands. The wetland policy states how wetland integrity will be protected.



The Umatilla Reservation has 1,050 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses *– *Uses specified by watershed; guessed at which are appropriate for wetlands from* Table 1. Designated Beneficial Uses for Water Quality Standards.

5. Cultural
6. Fish and Aquatic Life Habitat
7. Wildlife Habitat
8. Recreation
11. Pollution Abatement

Narrative Standard – G. Water Quality Standards Not to be Exceeded in the Surface Waters of the Reservation

7. The following Narrative Criteria apply to surface waters of the Reservation and their tributaries as identified in Table 4.

a) Objectionable discoloration, scum, oily slick or floating solids, or coating of aquatic life with oil films shall not be allowed.

b) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, cultural, recreation, or other uses made of such waters shall not be allowed.

c) The development of fungi, algae or other growths having a deleterious effect on stream bottoms, fish, or other aquatic life, or which are injurious to health, cultural and spiritual uses, recreation or industry shall not be allowed.

d) The creation of tastes, odors, toxics or other organoleptic effects that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shall not be allowed.

e) The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, cultural uses, recreation, or industry shall not be allowed.

f) Aesthetic conditions offensive to the human senses of sight, taste, smell or touch shall not be allowed.

g) There may be no concentrations of substances in water that singly or in combination cause toxic effects on aquatic life.

Antidegradation – Tier 3: Outstanding Tribal Waters. Where high quality waters constitute an outstanding resource of the Reservation such waters shall be maintained and protected. These high quality waters may include wild and scenic areas, wildlife refuges and waters of exceptional recreational, ecological, cultural or religious significance. The Department may require water quality controls, maintenance of natural flow regimes, protection of instream habitats, and land use practices protective of the watershed.

Wetland Definition – 40 CFR §116.3

K. Wetlands

1. All wetlands within the Reservation which are not constructed wetlands shall be subject to the Antidegradation Policy (Section E), the Toxic Substances Criterion (Section G (5)(1)), Narrative Criteria (Section G (6)) provisions within this chapter.

2. Water quality in wetlands shall be maintained at naturally occurring levels, within the natural range of variation for the individual wetland.

3. Physical and biological characteristics shall be maintained and protected by:

a) Maintaining hydrological conditions, including hydroperiod, hydrodynamics, and natural water temperature variations;

b) Maintaining the natural hydrophytic vegetation; and

c) Maintaining substrate characteristics necessary to support designated beneficial uses.

d) Wetlands shall not be used in lieu of stormwater treatment, except as specified by (g) below. Stormwater shall be treated before discharge to a wetland.

e) Point and nonpoint sources of pollution shall not cause destruction or impairment of wetlands except where authorized under Section 404 of the CWA

f) Wetlands shall not be used as repositories or treatment systems for wastes from human sources, except as specified by (g), below.

g) Wetlands intentionally created from non-wetland sites for the sole purpose of wastewater or stormwater treatment (constructed wetlands) are not considered "surface waters of the Reservation" and are not subject to the provisions of this section.

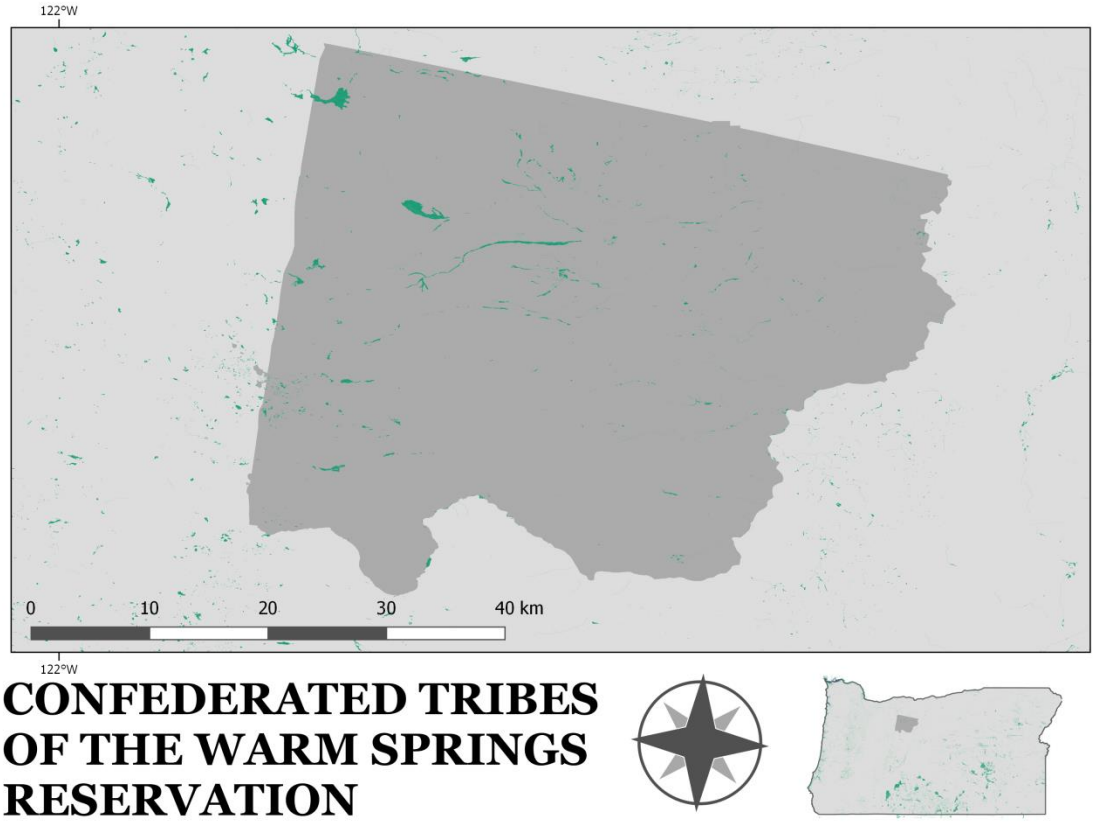
E. General Considerations Applicable to the Reservation

2. When a distinction cannot be made between classifications of surface water, wetlands, or groundwater, the applicable standards will depend on the existing and designated beneficial use that

may be adversely affected. At the boundary between waters of different classifications, the more stringent water quality criteria shall prevail. If the designated beneficial uses of more than one resource are affected, the most protective criteria shall apply.

Confederated Tribes of the Warm Springs Indian Reservation (OR)

The Warm Springs Reservation is located in north-central Oregon. The tribe's code define wetlands, marshes, and ponds as Waters of the Tribes. There are no specific or specified wetland uses. Narrative nuisance algae criteria are not applied in marshes and small ponds. Variance policy is a mix of natural conditions, use attainability, and feasibility requirements.



The Warm Springs Reservation has 5,684 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Table 1A Criteria to Support Designated Beneficial Uses on the Warm Springs Reservation of Oregon *[guessed which could apply to wetlands]*

> Resident Fish and Aquatic Life: Table 3, aquatic life and human health criteria, temperature criteria, DO criteria, narrative criteria, toxics narrative criteria, turbidity, TDG
>
> Wildlife and Hunting: Narrative Criteria, bacteria criteria
>
> Aesthetic Quality: Narrative Criteria

Narrative Standard – 432.100 Water Quality Standards not to be Exceeded in Deschutes, Clackamas, and Santiam River Basins on the Reservation

> (1) Notwithstanding the water quality standards contained below, the highest and best practicable treatment and/or control of wastes, activities, and flows shall in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.

Antidegradation – Tier 3: Where high quality waters constitute an outstanding resource of the Reservation, such as waters of National, and Tribal Wild & Scenic Areas, wildlife refuges and waters of exceptional recreational, ecological, cultural or religious significance, that water quality shall be

maintained and protected. Such waters may be classified as "Outstanding Resource Waters of the Reservation".

Wetland Definition – none

Site Specific Criteria and Criteria based on Natural Conditions – (432.110)(1) The Tribe may revise criteria on a Reservation-wide or waterbody specific basis as needed to protect aquatic life and human health and other existing and designated uses and to increase the technical accuracy of the criteria being applied.

(a) Whenever the natural conditions of the surface waters of the Tribes are of a lower quality than criteria assigned, the Tribe may determine that the natural conditions shall constitute the water quality criteria.

(A) If the natural condition varies with time, the natural condition will be determined as the prevailing highest quality natural condition measured during an annual, seasonal, or shorter period of time prior to human caused influence.

(B) The Tribe may, at its' discretion, determine a natural condition for one or more seasonal or shorter time periods to reflect variable ambient conditions.

(C) Historical data or data from an appropriate reference site, that represent natural condition, may be used to determine the criterion.

Nuisance Phytoplankton Growth – (432.400) The following values and implementation program shall be applied to lakes, reservoirs, and streams, except for ponds and reservations less than 10 acres in surface area and marshes: [...]

Variances from Water Quality Standards – (432.120)(b) In order to obtain a variance from a water quality standard the discharger must demonstrate that meeting the standard is unattainable based on one or more of the following grounds:

(A) Naturally occurring pollutant concentrations prevent attainment of the standard, or,

(B) Natural, ephemeral, intermittent, or low flow conditions or water levels prevent attainment of the standard, or,

(C) Human caused conditions or sources of pollutants prevent attainment of the standard and cannot be remedied or would cause more environmental damage to correct than to leave in place.

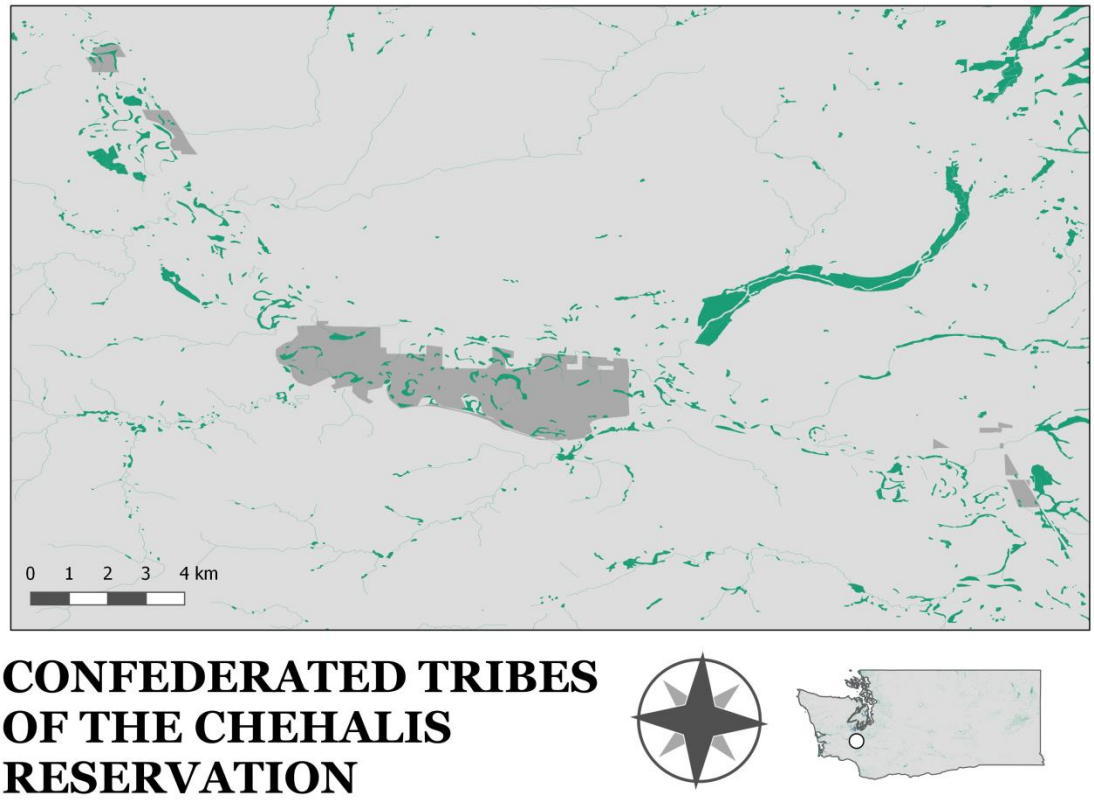
(D) Dams, diversions or other type of hydrologic modifications preclude attainment of the standard, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in attainment of the standard, or,

(E) Physical conditions related to the natural features of the water body, unrelated to water quality, preclude attainment of the standard, or,

(F) Controls more stringent than technology-based effluent limitations would result in substantial and widespread economic and social impact.

Confederated Tribes of the Chehalis Reservation (WA)

The Chehalis Reservation is located in western Washington. The surface water definition includes wetlands, but there are no specific wetland rules. Waterbodies classified from extraordinary to fair. Antidegradation rules state that natural water quality is allowed to be lower than criteria, site-specific criteria will be established as appropriate, and may be on a seasonal basis. All reservation waters should support water supply, stock watering, fish, wildlife, ceremonial, recreation, and commerce uses.



The Chehalis Reservation has 4,526 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – Section 4. General Water Use and Criteria Classes.

(1) Class AA (extraordinary). (a) General characteristics. Water quality of this class shall markedly and uniformly exceed the requirements for all or substantially all uses.

(b) Characteristic uses. Characteristic uses shall include but not be limited to the following:

(i) Water supply (domestic, industrial, agricultural)

(ii) Stock watering

(iii) Fish (salmonid migration, rearing, spawning, and harvesting. Other fish migration, rearing, spawning, and harvesting).

(iv) Wildlife habitat.

(v) Ceremonial and Religious use *[class AA and A only]*

(vi) Recreation (primary contact recreation, sport fishing, boating, and aesthetic enjoyment).

(vii) Commerce and navigation

(2) Class A (excellent). (a) General characteristic. Water quality of this class shall meet or exceed the requirements of all or substantially all uses.

(3) Class B (good). General characteristics. Water quality of this class shall meet or exceed the requirements for most uses.

(4) Class C (fair) [reserved]

Narrative Standard – Water quality criteria [listed for each class]. Water quality criteria shall include, but not be limited to, the following

(i) Fecal coliform organisms. (A) Freshwater – fecal coliform organism levels shall both not exceed a geometric mean value of 50 colonies/100mL and not have more than 10 percent of the samples obtained for calculating the geometric mean value exceeding 100 colonies/100 mL.

(ii) Dissolved oxygen . (A) Freshwater dissolved oxygen shall exceed 9.5 mg/L.

(iii) Total dissolved gas shall not exceed 110 percent (110%) of saturation at any point of sample collection.

(iv) Temperature shall not exceed 16.0^{0}C due to human activities. When natural conditions exceed 16.0^{0}C, no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3^{0}C

Incremental temperature increases resulting from point source activities shall not at any time, exceed t=23/(T+5).

(v) pH shall be within the range of 6.5 to 8.5 with a human-caused variation within a range of less than 0.2 units.

(vi) Turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

(vii) Toxic, radioactive, or deleterious material concentrations shall be below those which have the potential either singularly or cumulatively to adversely affect characteristic water uses, cause acute or chronic conditions to the most sensitive biota dependent upon those waters, or adversely affect public health, as determined by the Department.

(viii) Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the sense of sight, smell, touch, or taste.

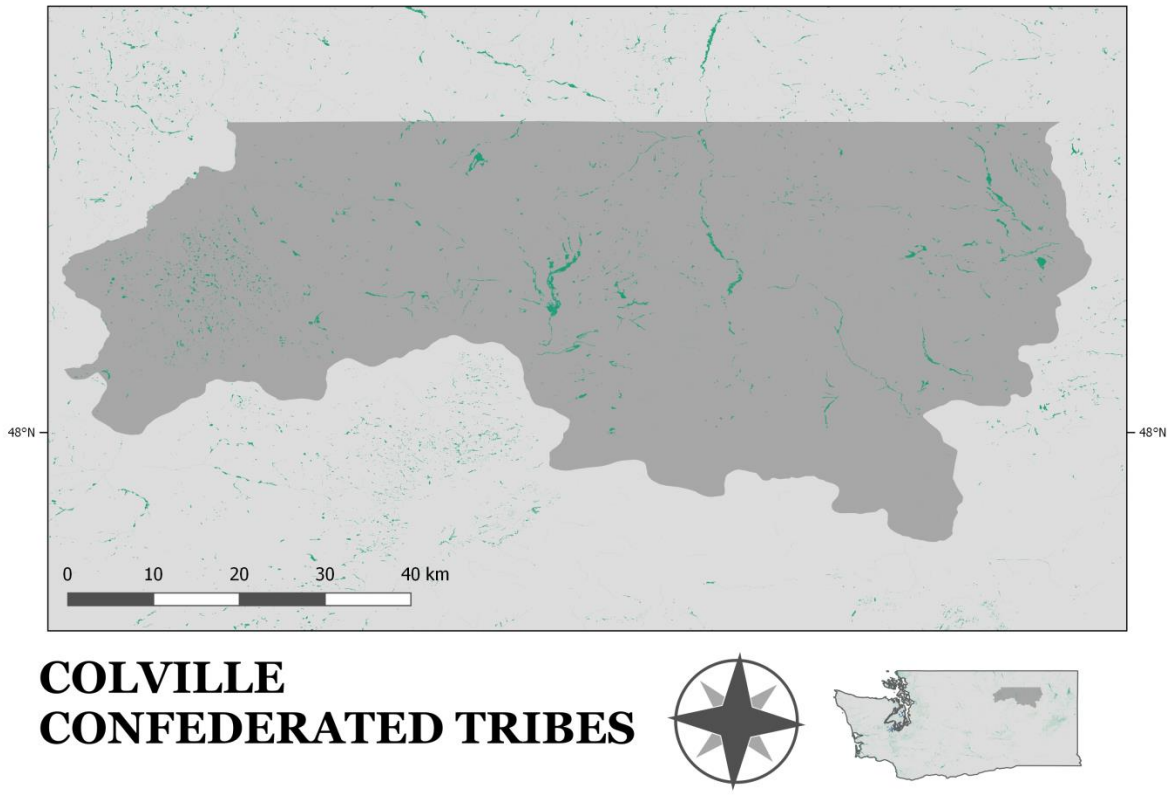
Antidegradation – no specific wetland rules; if natural conditions of surface waters are lower than assigned criteria the Department may assign site-specific criterion. Natural conditions may be assigned for seasonal or shorter time periods to reflect variable ambient conditions.

Wetland Definition – none

Short-Term modifications – (Section 10) of criteria allowed to accommodate essential activities, respond to emergencies, or to otherwise protect the public interest, even though such activities may result in a temporary reduction of water quality conditions below those criteria established in this ordinance.

Colville Confederated Tribes Indian Reservation (WA)

The Colville Reservation is located in eastern Washington. These tribes have a wetland-specific use category called Special Resource Waters, which support wildlife and foodchain maintenance. In addition to the narrative standard for the waters of the state, there are narrative criteria for the SRW class which are based on change from natural condition.



The Colville Reservation has 20,469 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – (f) General water use and criteria classes:

(6) Special Resource Water Class (SRW)– (i) General characteristics. These are fresh or saline waters which comprise a special and unique resource to the Reservation. Water quality of this class will be varied and unique as determined by the Regional Administrator in cooperation with the Tribes.

(ii) Designated uses. The designated uses include, but are not limited to, the following:

(A) Wildlife habitat

(B) Natural foodchain maintenance

(g) General classifications

(7) All wetlands are assigned to the Special Resource Water Class

Narrative Standard – (e) General considerations (3) Aesthetic qualities

(3) *Aesthetic qualities*. All waters within the Reservation, including those within mixing zones, shall be free from substances, attributable to wastewater discharges or other pollutant sources, that:

(i) Settle to form objectionable deposits;

(ii) Float as debris, scum, oil, or other matter forming nuisances;

(iii) Produce objectionable color, odor, taste, or turbidity;

(iv) Cause injury to, are toxic to, or produce adverse physiological responses in humans, animals, or plants; or

(v) produce undesirable or nuisance aquatic life.

(f)(6)(iii) Water quality criteria [*for Special Resource Water]*

(A) Enterococci bacteria densities shall not exceed natural conditions

(B) Dissolved oxygen shall not vary from natural conditions

(C) Total dissolved gas shall not vary from natural conditions

(D) Temperature- shall not show any measurable change from natural conditions

(E) pH shall not show any measurable change from natural conditions

(F) Settleable solids shall not show any change from natural conditions

(G) Turbidity shall not exceed 5 NTU over natural conditions

(H) Toxic, radioactive, or deleterious material concentrations shall not exceed those found under natural conditions

Antidegradation – no wetland-specific language

Wetland Definition – none

Definitions –

(14) *Surface water* means all water above the surface of the ground within the exterior boundaries of the Colville Indian Reservation including but not limited to lakes, ponds, reservoirs, artificial impoundments, streams, rivers, springs, seeps and wetlands.

(2) *Background conditions* means the biological, chemical, and physical conditions of a water body, upstream from the point or non-point source discharge under consideration. Background sampling location in an enforcement action will be upstream from the point of discharge, but not upstream from other inflows. If several discharges to any water body exist, and an enforcement action is being taken for possible violations to the standards, background sampling will be undertaken immediately upstream from each discharge.

Applicability - (6) All numeric criteria contained in this section apply at all in-stream flow rates greater than or equal to the flow rate calculated as the minimum 7-consecutive day average flow with a recurrence frequency of once in ten years (7Q10); narrative criteria (§ 131.35(e)(3)) apply regardless of flow. The 7Q10 low flow shall be calculated using methods recommended by the U.S. Geological Survey.

Kalispel Indian Reservation (WA)

The Kalispel Indian Reservation is located in eastern Washington. There are 7 narrative standards, one for each use. Wetlands are classified as Special Resource Waters subject to the Aesthetic Quality and Toxicity criteria and additional narrative criteria. When water flow is below critical volume, only narrative criteria apply.

Designated Uses – 13) Special Resource Water Class:

Aesthetic Quality

Narrative Standard – Aesthetic Qualities Criteria and Toxic Substances criteria apply at all times additional criteria for Special Resource Water Class

10) Toxic Substances – 1) Toxic substances shall not be introduced in waters of the reservation in amounts, concentrations, or combinations which have the potential either singularly or cumulatively to adversely affect characteristic water uses, cause acute or chronic toxicity to the most sensitive biota dependent upon those waters, or adversely affect public health, as determined by the department. The numeric criteria in Table 2 shall apply to all waters for which the Tribe determines that designated uses are attainable that provide for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water.

12(g) Aesthetic Qualities – All waters within the Reservation, including those within mixing zones, shall be free from substances, attributable to wastewater discharges or other pollutant sources, that:

i) settle to form objectionable deposits:

ii) float as debris, scum, oil, or other matter forming nuisances:

iii) produce objectionable color, odor, taste, or turbidity;

iv) cause injury to, are toxic to, or produce adverse physiological responses in humans, animals, or plants; or

v) produce undesirable or nuisance aquatic life

13) Special Resource Water Class – These are waters that comprise a special and unique resource to the Reservation and include wetlands, ephemeral streams, headwater streams and all other unclassified waters not intentionally created as waterways or waterbodies. Physical and biological conditions of these waters shall be maintained in a natural state. Aesthetic Qualities criteria and Toxic Substances criteria apply to these waters at all times. Additionally, the following criteria apply at all times:

1) Toxic, radioactive, or deleterious materials shall be below levels which have the potential either singularly or in combination to interfere with use a as source water for domestic and municipal water supplies, or adversely affect public health as determined by the department.

2) Livestock, pet, human, commercial, and industrial wastes are not allowed to be drained or discharged into Waters of the Reservation without control or treatment with best management practices approved by the department and sufficient to meet all criteria.

Antidegradation –no wetland-specific language

Wetland Definition – 40 CFR §116.3; wetlands (along with ephemeral streams and headwater streams) classified as Special Resource Water Class

Definitions –

Surface Water: All water above the surface of the ground within the exterior boundaries of the Kalispel Indian Reservation including but not limited to, lakes, ponds, rivers, springs, seeps, and wetlands.

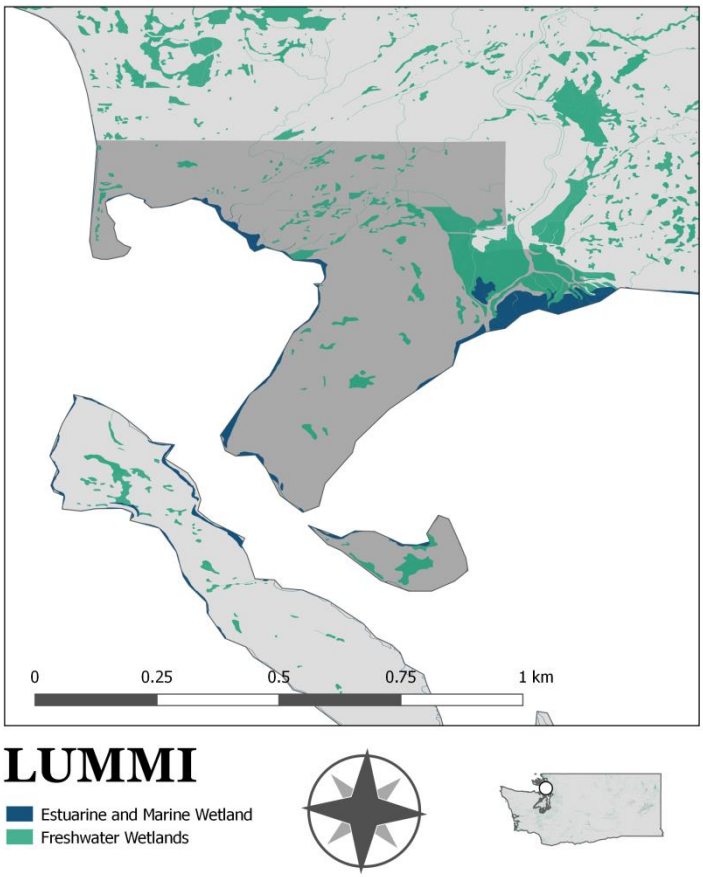
Waters of the Reservation: Lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, marshes, wetlands, inlets, canals, and all other bodies of surface water, natural, or artificial, inland, fresh, public or private (except those private waters that do not combine or affect a junction with natural surface or underground waters), which are within the Reservation.

13) Special Resource Water Class These are waters that comprise a special and unique resource to the Reservation and include wetlands, ephemeral streams, headwater streams and all other unclassified waters not intentionally created as waterways or waterbodies. Physical and biological conditions of these waters shall be maintained in a natural state. Aesthetic Qualities criteria and Toxic Substances criteria apply to these waters at all times. Additionally, the following criteria apply at all times

**Narrative criteria apply regardless of flow, numeric criteria apply only above critical flow.*

Lummi Indian Reservation (WA)

The Lummi Indian Reservation is located in northern Washington. Wetlands, ponds, and estuaries are identified as Surface waters of the Reservation. There are no specific uses for wetland areas, most or all uses apply to extraordinary, excellent, good, and lake classes. The Lake Class pH criteria is based on change from natural. The tribe modified the syntax of the Washington WQS for compatibility with government and culture of Lummi Nation. Storm water drainage facilities are included as waters of the reservation.



The Lummi Indian Reservation has 7,051 acres of wetlands (in green and blue) according to the National Wetland Inventory.

Designated Uses – 17 LAR 07.030 General Water Use and Criteria Classes [*Class-based*]:

Class AA (extraordinary). Water quality of this class shall uniformly exceed the requirements for all or substantially all uses.

Class A (excellent). Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

Class B (good). Water quality of this class shall meet or exceed the requirements for most uses.

Lake class. Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

*Characteristic uses of all classes: water supply, stock watering, Fish and shellfish [*broader suite of aquatic life in higher class waters*], Wildlife habitat, Recreation, Commerce and navigation, Tribal Cultural

Narrative Standard – 17 LAR 07.030 (e) Narrative Water Quality Criteria

(1) All surface waters of the Lummi Indian Reservation, including those within designated mixing zones, shall be free from substances attributable to point source discharges, nonpoint sources, vessel discharges, or instream activities in accordance with the following:

(A) Floating solids, oil, and grease. All waters shall be free from visible oils, including crude oil and petroleum, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from anthropogenic causes.

(B) Color. True color-producing materials resulting from anthropogenic causes shall not create an aesthetically undesirable condition; nor should color inhibit photosynthesis or otherwise impair the existing and designated uses of the water.

(C) Odor and taste. Water contaminants from anthropogenic causes shall be limited to concentrations that will not impart unpalatable flavor to fish, or result in offensive odor or taste arising from the water, or otherwise interfere with the existing and designated uses of the water.

(D) Nuisance conditions. Nutrients or other substances from anthropogenic causes shall not be present in concentrations which will produce objectionable algal densities or nuisance aquatic vegetation, result in a dominance of nuisance species, result in acute toxicity to any aquatic biota or wildlife, adversely affect public health or safety, or otherwise cause nuisance conditions.

(E) Bottom deposits. All surface waters of the Lummi Indian Reservation shall be free from anthropogenic contaminants that may settle and have a deleterious effect on the aquatic biota or that will significantly alter the physical or chemical properties of the water or the bottom sediments.

(F) Erosion. All waters shall be free from deleterious levels of soil particles resulting from erosion of land involved in earthwork, such as construction of public works, highways, or commercial or industrial developments, or the cultivation and management of agricultural or forested lands.

Antidegradation – no wetland-specific language. Outstanding Resource Waters include those with documented aquatic habitat of priority species, critical habitat for T&E native anadromous fish; waters of exceptional recreation, ceremonial, cultural or ecological significant, supporting priority species of the Lummi Nation.

Wetland Definition – none

Definitions –

"Background conditions" means the biological, chemical, and physical conditions of a water body outside the area of influence of the discharge under consideration. The background sampling location would be upgradient or outside the area of influence of the discharge. If several discharges to any water body exist, background sampling would be undertaken immediately upgradient from each discharge. When assessing background conditions in the headwaters of a disturbed watershed, it may be necessary to use the background conditions of a neighboring or similar watershed as the reference conditions. When assessing background conditions in estuaries, tidal influences must be considered.

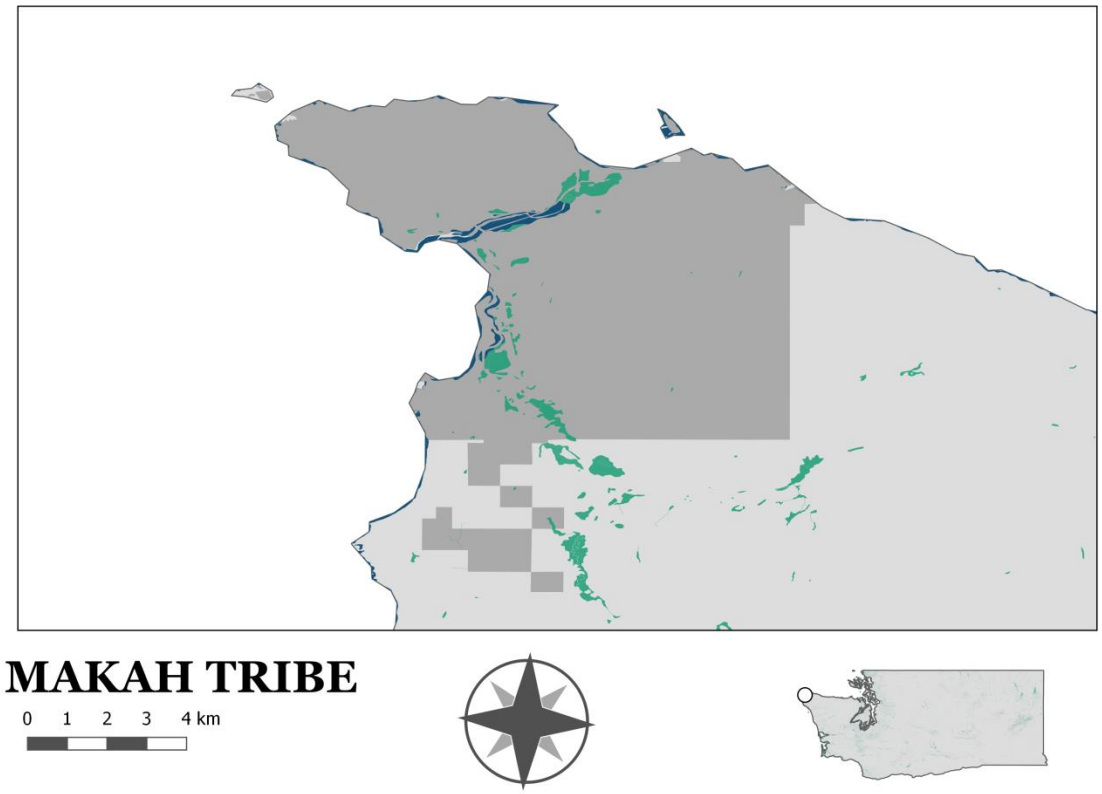
“Surface waters of the Lummi Indian Reservation” means any or all fresh or marine waters originating from precipitation or ground water discharge that are found at the surface of the earth and that originate or flow in, into, or through the Reservation, or that are stored on the Reservation, primarily in rivers, streams, springs, seeps, ponds, wetlands, lakes, and storm water drainage facilities.

Lake Class pH criteria – 17 LAR 07.030 (d)(3)(F) – no measurable change from natural conditions.

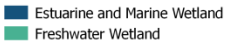
Water Quality Offsets, Short-term Exceedances for emergency activities

Makah Tribe (WA)

The Makah Tribe reservation is located in northwestern Washington. The tribal water quality code has a separate section detailing Water Quality Standards for Wetlands, which requires maintaining the physical and biological characteristics by maintaining hydrological conditions, hydrophytic vegetation, and substrate characteristics. The narrative standard alone applies to wetlands. The code also addresses in-stream flow needs.



The Makah Tribe Reservation has 2,101 acres of wetlands (in green and blue) according to the National Wetland Inventory.



Designated Uses – Section 7. Lake Designated Uses and Criteria

(4) Applicability of water quality criteria to wetland use designations

Ceremonial and Religious

Cultural

Water Supply

Salmon and Trout Spawning

Salmon and Trout Rearing and Migration

Wildlife

Primary Contact Recreation

Secondary Contact Recreation

Commerce and Navigation

Narrative Standard – Section 8. Narrative Water Quality Criteria

All surface waters of the tribe, including those within designated mixing zones, shall be free from substances attributable to point source discharges, nonpoint sources, vessel discharges, or instream activities in accordance with the following:

(1) Floating solids, oil, and grease. All waters shall be free from visible oils, including crude oil and petroleum, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from anthropogenic causes.

(2) Color. True color-producing materials resulting from anthropogenic causes shall not create an aesthetically undesirable condition; nor should color inhibit photosynthesis or otherwise impair the existing and designated uses of the water.

(3) Odor and taste. Water contaminants from anthropogenic causes shall be limited to concentrations that will not impart unpalatable flavor to fish, or result in offensive odor or taste arising from the water, or otherwise interfere with the existing and designated uses of the water.

(4) Nuisance conditions. Nutrients or other substances from anthropogenic causes shall not be present in concentrations which will produce objectionable algal densities or nuisance aquatic vegetation, result in a dominance of nuisance species, result in acute toxicity to any aquatic biota or wildlife, adversely affect public health or safety, or otherwise cause nuisance conditions.

(5) Turbidity. Turbidity shall not be at a level to potentially impair designated uses or aquatic biota.

(6) Bottom deposits. All surface waters of the tribe shall be free from anthropogenic contaminants that may settle and have a deleterious effect on the aquatic biota or that will significantly alter the physical or chemical properties of the water or the bottom sediments.

(7) Erosion. All waters shall be free from deleterious levels of soil particles resulting from erosion of land involved in earthwork, such as construction of public works, highways, or commercial or industrial developments, or the cultivation and management of agricultural or forested lands.

Antidegradation –no wetland-specific language

Wetland Definition – 40 CFR §116.3

Section 6. Water Quality Standards for Wetlands.

(1) All wetlands within the exterior boundaries of the reservation, which are not constructed wetlands, are subject to the Narrative Criteria (Section 8), Antidegradation Policy (Section 16), and Narrative Toxic Substances Criterion provisions (Section 12) within this ordinance.

(2) Water quality in wetlands shall be maintained at naturally occurring levels, within the natural range of variation for the individual wetland.

(3) Physical and biological characteristics shall be maintained and protected by:

(a) Maintaining hydrological conditions, including hydroperiod, hydrodynamics, and natural water temperature variations;

(b) Maintaining the native hydrophytic vegetation; and

(c) Maintaining substrate characteristics necessary to support existing and designated uses.

(4) Wetlands shall not be used in lieu of storm water treatment, except as specified by subsection 7, below. Storm water shall be treated before discharge to a wetland.

(5) Point and nonpoint sources of pollution shall not cause destruction or impairment of wetlands except where authorized by the department and the Tribal Council and approved by the United States Army Corps of Engineers under Section 404 of the CWA.

(6) Wetlands shall not be used as repositories or treatment systems for wastes from human sources, except as specified by subsection 7, below.

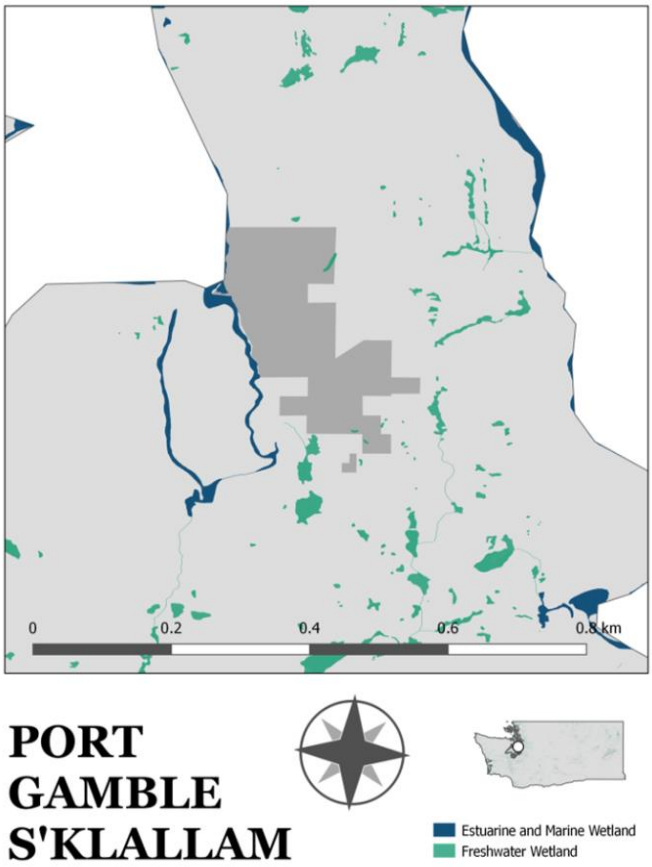
(7) Wetlands intentionally created from non-wetland sites for the sole purpose of wastewater or storm water treatment (constructed wetlands) are not considered “surface waters of the tribe” and are not subject to the provisions of this section.

Instream Flow (Section 11.) – Except as necessary to meet beneficial uses expressly authorized by the Council, those flows and levels, including tributary surface and ground waters, necessary to maintain the physical, chemical, biological, and cultural integrity of the Makah Reservation’s waters shall be maintained and restored to the fullest extent practicable in order to maintain and restore existing and designated uses. Such uses shall include migration, spawning, incubation, and rearing by anadromous fish. The Makah Tribe will, from time-to-time, set habitat-specific flows and levels for existing and restored anadromous fish habitat within the reservation boundaries.

**Marine vs. freshwater criteria based on salinity in ppt.*

Port Gamble S'Klallam Tribe (WA)

The Port Gamble S'Klallam Tribe reservation is located in western Washington. The wetlands section of the tribal water quality standards specifies that wetlands are subject to the narrative standard and antidegradation rules. The wetland policy also requires no stormwater and waste discharges to wetlands. No specific designated uses are supported by wetlands, all unclassified waters support recreation, cultural, and cold water aquatic life uses.



The Port Gamble Reservation has 316 acres of wetlands (in green and blue) according to the National Wetland Inventory.

Designated Uses – 18. Designated Uses

(c) Recreational and Cultural Use. Surface waters which are suitable or intended to become suitable for prolonged intimate contact by humans or for activities where the ingestion of small quantities of water is likely to occur. Such waters include, but are not restricted to, those used for swimming, wading, fishing, boating, and for ceremonial or cultural purposes.

(d) Aquatic Life Uses. (iii) Cold Water Biota. Surface waters used or naturally suitable as habitat for all life cycles of naturally-occurring aquatic organisms which have optimal growing temperatures below 18^0C.

20. General Classifications – All surface waters of the Port Gamble S'Klallam Reservation shall be designated, at a minimum, for the protection of cold water biota and for recreational and cultural uses [...]. All fresh surface waters not specifically classified shall be designated for cold water biota and for recreational and cultural uses.

Narrative Standard – 5. Narrative Criteria

All surface waters of the Port Gamble S'Klallam Reservation shall be free from substances attributable to point source discharges, nonpoint sources, or instream activities in accordance with the following:

(1) Floating Solids, Oil and Grease: All waters shall be free from visible oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes.

(2) Color: True color-producing materials resulting from other than natural causes shall not create an aesthetically undesirable condition; nor should color inhibit photosynthesis or otherwise impair the existing and designated uses of the water.

(3) Odor and Taste: Water contaminants from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish, or result in offensive odor or taste arising from the water, or otherwise interfere with the existing and designated uses of the water.

(4) Nuisance Conditions: Nutrients or other substances from anthropogenic causes shall not be present in concentrations which will produce objectionable algal densities or nuisance aquatic vegetation, result in a dominance of nuisance species, or otherwise cause nuisance conditions.

(5) Turbidity: Turbidity shall not be at a level to potentially impair designated uses or aquatic biota.

(6) Bottom Deposits: All surface waters of the Port Gamble S'Klallam Reservation shall be free from anthropogenic contaminants that may settle and have a deleterious effect on the aquatic biota or that will significantly alter the physical and chemical properties of the water or the bottom sediments.

11. Wetlands

(1) All wetlands within the boundaries of the Port Gamble S'Klallam Reservation which are not constructed wetlands shall be subject to the Narrative Criteria (section 5), Antidegradation (section 6), and Narrative Toxic Substances Criteria (section 7(1)) provisions within these Standards.

(2) Wetlands shall not be used in lieu of stormwater treatment, except as specified by number 5 below. Storrnwater shall be treated before discharge to a wetland.

(3) Point and nonpoint sources of pollution shall not cause destruction or impairment of wetlands except where authorized under section 404 of the CWA.

(4) Wetlands shall not be used as repositories or treatment systems for wastes from human sources, except as specified by number 5, below.

(5) Wetlands intentionally created from non-wetland sites for the sole purpose of wastewater or stormwater treatment (constructed wetlands) are not considered "surface waters of the Port Gamble S'Klallam Reservation It and are not subject to the provisions of this section.

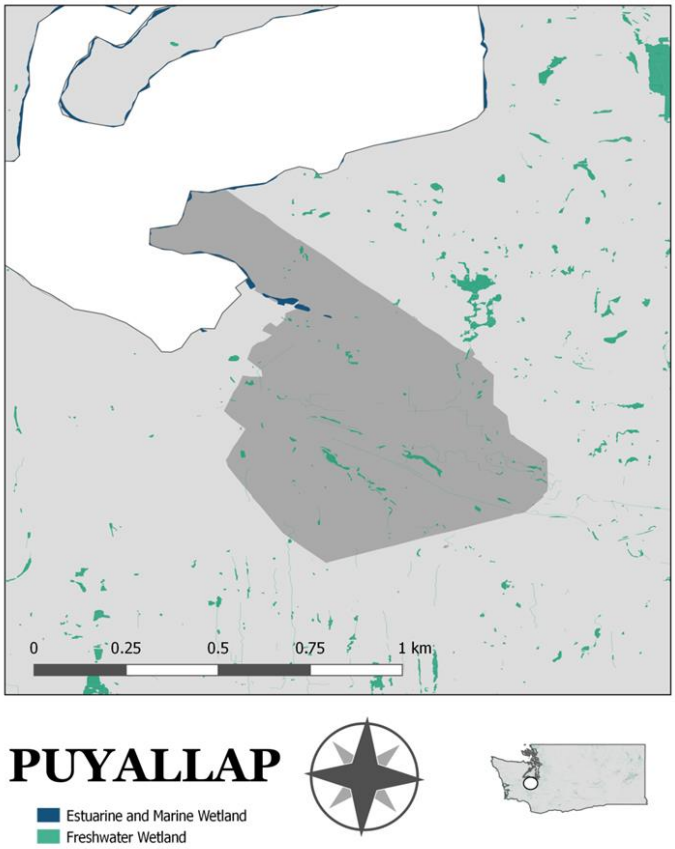
Antidegradation – no wetland specific language

Wetland Definition – 40 CFR 16.3

**Withdrew selenium and mercury chronic aquatic life criterion, rely on narrative toxic criteria.*

Puyallap Tribe (WA)

The Puyallap Tribe reservation is located in western Washington. Surface waters definition includes wetlands. All unclassified waters (assumed to include wetlands) are Class A (excellent) and support all uses. Allow dissolved oxygen depression due to natural upwelling events in marine waters.



The Puyallap Tribe reservation has 715 acres of wetlands (in green and blue) according to the National Wetland Inventory.

Designated Uses – Section 7 General Classifications:

All other unclassified surface waters [*not lakes or feeder streams or tributaries to Class AA waters*] are hereby classified Class A

Section 4. General Water Use and Criteria Classes

(2) Class A (excellent)

(a) General characteristic. Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

(b) Characteristic uses. Characteristic uses shall include, but not be limited to, the following:

(i) Water supply (domestic, industrial, agricultural)

(ii) Stock watering

(iii) Fish and shellfish: salmonid migration, rearing, spawning, and harvesting. Other fish migration, rearing, spawning, and harvesting. Clam, oyster, and mussel rearing, spawning, and harvesting. Crustacean and other shellfish (crabs, shrimp, crayfish, scallops, etc.) rearing, spawning, and harvesting

(iv) Wildlife habitat.

(v) Ceremonial and Religious water use.

(vi) Recreation (primary contact recreation, sport fishing, boating, and aesthetic enjoyment).

(vii) Commerce and navigation

Narrative Standard – Section 4(2)(c) Water quality criteria

(i) Fecal coliform organisms

(A) Freshwater – fecal coliform organism levels shall both not exceed a geometric mean value of 100 colonies/100 mL and not have more than 10 percent of the samples obtained for calculating the geometric mean value exceeding 200 colonies/100 mL.

(B) Marine water – fecal coliform organism levels shall both not exceed a geometric mean value of 14 colonies/100 mL and not have more than 10 percent of the samples obtained for calculating the geometric mean value exceeding 43 colonies/100 mL

(ii) Dissolved oxygen

(A) Freshwater – dissolved oxygen shall exceed 8.0 mg/L

(B) Marine water – dissolved oxygen shall exceed 6.0 mg/L. When natural conditions, such as upwelling occur, causing the dissolved oxygen to be depressed near or below 6.0 mg/L, natural dissolved oxygen levels can be degraded by up to 0.2 mg/L by human-caused activities.

(iii) Total dissolved gas shall not exceed 110 percent (110%) of saturation at any point of sample collection.

(iv) Temperature shall not exceed 18.0^{0}C (freshwater) or 16.0^{0}C (marine water) due to human activities. When natural conditions exceed 18.0^{0}C (freshwater0 and 16.0^{0}C (marine water), no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3^{0}C.

Incremental temperature increases resulting from point source activities shall not, at any time, exceed t=28/(T+7) (freshwater) or t=12/(T-2) (marine water). Incremental temperature increases resulting from nonpoint source activities shall not exceed 2.8^{0}C. [...]

(v) pH shall be within the range of 6.5 to 8.5 (freshwater) or 7.0 to 8.5 (marine water) with a human-caused variation within a range of less than 0.5 units.

(vi) Turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

(vii) Toxic, radioactive, or deleterious material concentrations shall be below those which have the potential either singularly or cumulatively to adversely affect characteristic water uses, cause acute or chronic conditions to the most sensitive biota dependent upon those waters, or adversely affect public health as determined by the Department.

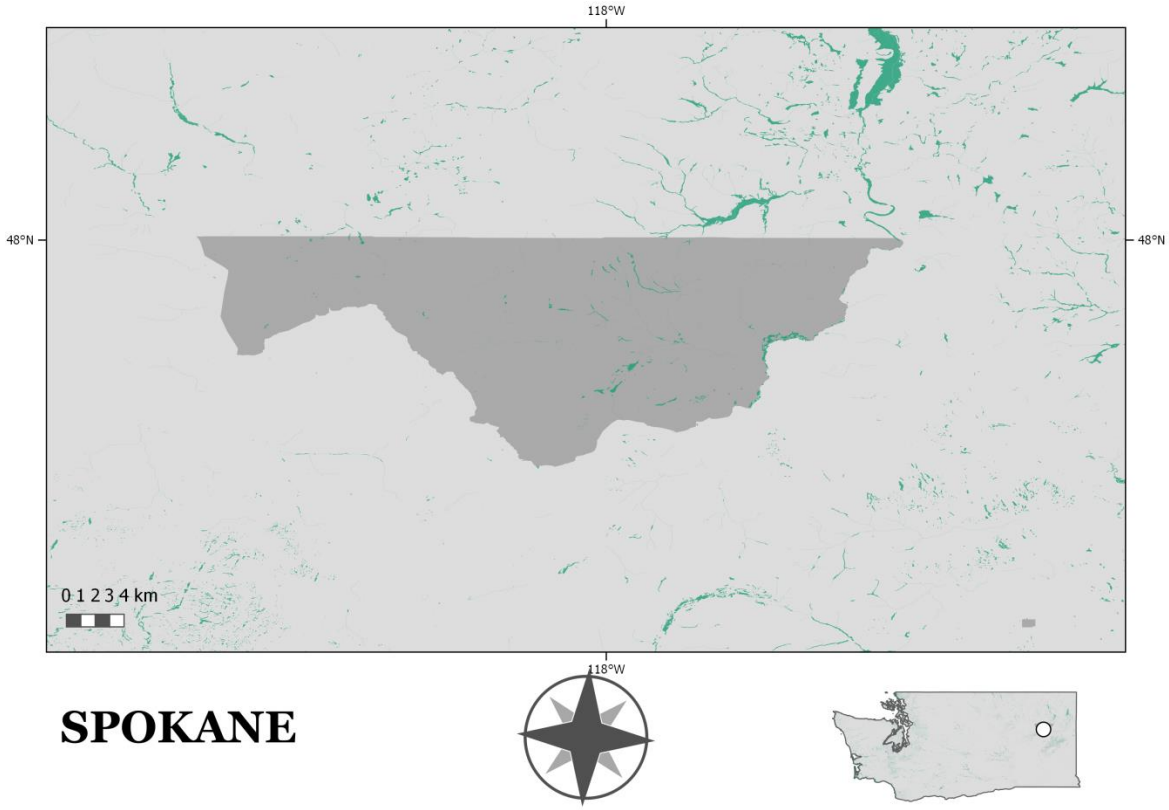
(viii) Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste.

Antidegradation – no wetland-specific language

Wetland Definition – none

Spokane Tribe of Indians (WA)

The Spokane Tribe of Indians reservation is located in eastern Washington. The wetland policy states that wetlands are waters of the reservation and narrative criteria and antidegradation apply. All unclassified waters (assumed to include wetlands) are Class A - Excellent. Lake nutrient criteria based on trophic status (defined by phosphorus concentration)



The Spokane Tribe reservation has 1,573 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – 9. Water Use and Criteria Classes (Extraordinary, Excellent, Lake)

(2) Class A - Excellent

(a) General characteristics. Water quality of this class shall meet or exceed the requirements for all or substantially all designated uses.

(b) Designated uses. Designated uses shall include, but not be limited to, the following:

(i) Primary contact ceremonial and spiritual;

(ii) Cultural;

(iii)Water supply (domestic, industrial, agricultural);

(iv) Stock watering;

(v) Fish and shellfish, including:

--Salmonid migration, rearing, spawning, and harvesting.

--Other fish migration rearing, spawning, and harvesting.

--Mollusks, crustaceans and other shellfish rearing, spawning, and harvesting.

(vi) Primary contact recreation, and

(vii)Commerce and navigation.

10. General Classifications

(4) All unclassified surface waters that are tributaries to classified waters shall assume the class of the receiving water.

(5) All other unclassified surface waters are classified as A.

Narrative Standard – 5. Narrative Criteria

All surface waters of the Reservation shall be free from pollutants and other materials attributable to point source discharges, nonpoint sources, or instream activities in accordance with the following:

(1) Floating Solids, Oil and Grease: All waters shall be free from visible oils, scum, foam, grease, and other floating and suspended materials of a persistent nature resulting from other than natural causes.

(2) Color: True color-producing materials resulting from other than natural causes shall not create an aesthetically undesirable condition; nor should color inhibit photosynthesis or otherwise impair the existing and designated uses of the water.

(3) Odor and Taste: Materials from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish, or result in offensive odor or taste arising from the water, or otherwise interfere with the existing and designated uses of the water.

(4) Nuisance Conditions: Nutrients or other materials from anthropogenic causes shall not be present in concentrations which will produce objectionable algal densities or nuisance aquatic vegetation, result in a dominance of nuisance species, or otherwise cause nuisance conditions.

(5) Turbidity: Turbidity shall not be at a level to threaten or impair existing and designated uses or aquatic biota.

(6) Bottom Deposits: All surface waters of the tribe shall be free from anthropogenic materials that may settle and have a deleterious effect on the aquatic biota or that will significantly alter the physical and chemical properties of the water or the bottom sediments.

(7) In issuing permits, Tribal authorities shall attempt to insure that to the extent practicable, all waters shall be free from soil particles resulting from erosion of land involved in earthwork, such as construction of public works, highways, or commercial or industrial developments, or the cultivation and management of agricultural or forested lands, or resulting from discharges from consumptive or nonconsumptive uses of water following surface water diversions or ground water pumping.

Antidegradation – no wetland-specific language in reservation-wide antidegradation section, wetland section specifies antidegradation applies to wetlands.

Wetland Definition – 40 CFR §116.3

Wetlands Rules – 12. Wetlands

(1) All wetlands within the reservation which are not constructed or engineered shall be subject to the Narrative Criteria (Section 5) and Toxic Pollutants Criteria (Section 6) provisions of this chapter.

(2) Water quality in wetlands shall be maintained at naturally occurring levels: within the natural range of variation for the individual wetland.

(3) Physical and biological characteristics shall be maintained and protected by:

(a) Maintaining hydrological conditions, including hydroperiod, hydrodynamics, and natural water temperature variations;

(b) Maintaining vegetation; and, the natural hydrophytic

(c) Maintaining substrate characteristics necessary to support existing and designated uses.

(4) Wetlands shall not be used in lieu of treatment, except as specified by number (7) below. shall be treated before discharge to a wetland .

(5) Point and nonpoint sources of pollution shall not cause destruction or impairment of wetlands except where authorized under Section 404 of the CWA.

(6) Wetlands shall not be used as repositories or treatment systems for wastes from human sources, except as specified by number (7) below.

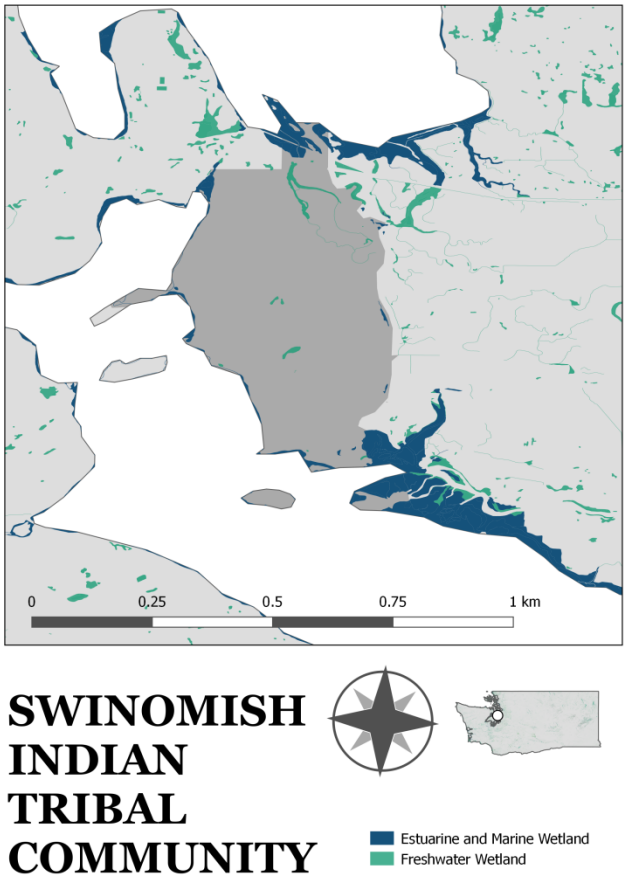
(7) Wetlands intentionally created from non-wetland sites or by enhancing naturally-occurring wetlands for the sole purpose of wastewater or stormwater treatment (constructed or engineered wetlands) are not considered "surface waters of the tribe" and are not subject to the provisions of this section.

Nutrient Criteria *- for lakes, ambient total phosphorus used to classify lakes into trophic status, criteria set at upper boundary of trophic status*

**Conflict with EPA over human health criteria related to fish consumption, tribe wanted stricter standards than EPA baseline values.*

Swinomish Indian Tribal Community (WA)

The Swinomish Indian Tribal Community is located in western Washington. The wetland rules section establishes the definition, uses, narrative and numeric criteria, and antidegradation rules for wetlands. Wetland narrative requires maintaining floristic quality, pH, water level and temperature.. Existing uses applicable to wetlands are specified.



The Swinomish Indian Tribal Community reservation has 4,523 acres of wetlands (in blue and green) according to the National Wetland Inventory.

Designated Uses – Table 3 (pg 47) [*Uses wetland criteria are applicable to*]

Aquatic Life Use: Salmon and Trout Fish Use

Fish & Shellfish Harvesting Use

Water Contact Uses: Primary Contact

Domestic Water Supply Use

Aesthetic Value

Spiritual & Cultural

Wildlife

Narrative Standard – 19-06.150 Narrative Criteria Applicable to All Regulated Surface Waters.

(A) Aesthetic Quality. Regulated Surface Waters shall be free from pollutants attributable to point source discharges, nonpoint sources, and instream activities in accordance with the following criteria:

(1) Floating Solids, Oil and Grease: Regulated Surface Waters, stream banks, and shorelines shall be free from visible oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes

(2) Color: True color-producing materials resulting from anthropogenic causes shall not create an aesthetically undesirable condition, nor should color inhibit photosynthesis.

(3) Odor and Taste: Pollutants resulting from anthropogenic causes shall not produce objectionable odor or taste in Regulated Surface Waters, aquatic life, or wildlife.

(4) Nuisance Conditions: Pollutants resulting from anthropogenic causes shall not be present in Regulated Surface Waters in concentrations which will produce objectionable algal densities or nuisance species which may impair ecological integrity.

(5) Turbidity: (a) Turbidity resulting from anthropogenic causes in Regulated Surface Waters shall not be at a level that may have a deleterious effect on an aquatic life community present in those waters.

(6) Bottom Deposits: Regulated Surface Waters shall be free from pollutants resulting from anthropogenic causes (1) that may settle and have a deleterious effect on an aquatic life community present in those waters or (2) that will significantly alter the physical and chemical properties of the water or bottom sediments.

(B) Biological Criteria.

(1) Regulated Surface Waters shall be of sufficient quality to preserve, protect, and enhance all life stages of resident and/or anadromous finfish and any aquatic biotas or aquatic life communities present in those waters.

(2) Riparian cover along Regulated Surface Water streams shall provide sufficient shade cover to maintain or enhance water temperatures and shall contain vegetation of a species diversity, size, and density typical of a fully functioning natural riparian zone.

(3) Regulated Surface Waters shall be free from substances, whether attributable to point source discharges, nonpoint sources, or instream activities, in concentrations or combinations which may have a deleterious effect on an aquatic life community present in those waters and the ecological integrity of those waters.

(4) The structure and function of resident aquatic life communities shall be measured by biological assessment methods approved by the Department.

(5) Determination of an actual or potential deleterious effect on an aquatic life community or on ecological integrity shall be based on biological assessment and comparison with an appropriate reference site or region.

Antidegradation – 19-06.220 Tier III – Protection of Outstanding Tribal Resource Waters. (B)(2) The water body has unique aquatic habitat types, such as wetlands, that by conventional water quality parameters (such as dissolved oxygen, temperature, or sediment) are not considered high quality, but that are unique and regionally rare examples of their kind;

Wetland Definition – "Wetlands" means any lands that fit the criteria established by the U.S. Army Corps of Engineers Wetlands Delineation Manual (1987). Generally, wetlands are those areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation.

Wetland Rules – 19-06.150. (C) Wetlands. Water quality in wetlands within the exterior boundaries of the Reservation, including created wetlands which are not constructed wetlands, shall be protected by maintaining the hydrological conditions, hydrophilic vegetation, and substrate characteristics to support existing and designated uses. Narrative and numeric water quality criteria described in Section 19-06.100 and Sections 19-06.140 through 19-06.150 of this Chapter, shall apply to wetlands.

(1) Definition: For the purposes of this section, wetlands are defined by the hydrogeomorphic (HGM) classification scheme.

(2) Designated Uses: For all wetlands, as defined by the HGM classification scheme, the uses to be protected include but are not limited to: cultural opportunities, indigenous floral faunal diversity abundance, protection of downstream water quality, recreation, and water-dependent wildlife to the extent that such uses occur as represented by reference wetlands.

(3) Narrative Criteria: All wetlands, as defined by the HGM classification scheme, shall maintain biological, physical, and hydrological conditions - as determined by reference wetlands including, but not limited to: floristic quality; pH of wetland waters; water levels or elevations; and water temperature variations.

(4) Numeric Criteria: For all Regulated Surface Waters that constitute wetlands, freshwater or marine water numeric criteria identified in Table 15, and water contact criteria in Table 8 (for freshwater) and Table 14 (for marine water) respectively shall apply to the wetlands based on salinities defined in 19-06.100(E)(1) to 19-06.100(E)(3). For all waters, the applicable human health criteria are the organism's only criteria.

(5) Antidegradation requirements. For all Regulated Surface Waters that constitute wetlands, as defined by the HGM classification scheme, the antidegradation requirements described in 19-06.190 to 19-06.220 shall apply

Construction – 19-06.070 (A) This Chapter is exempt from the rules of strict construction and shall be liberally construed to give full effect to the objectives and purposes for which it was enacted.

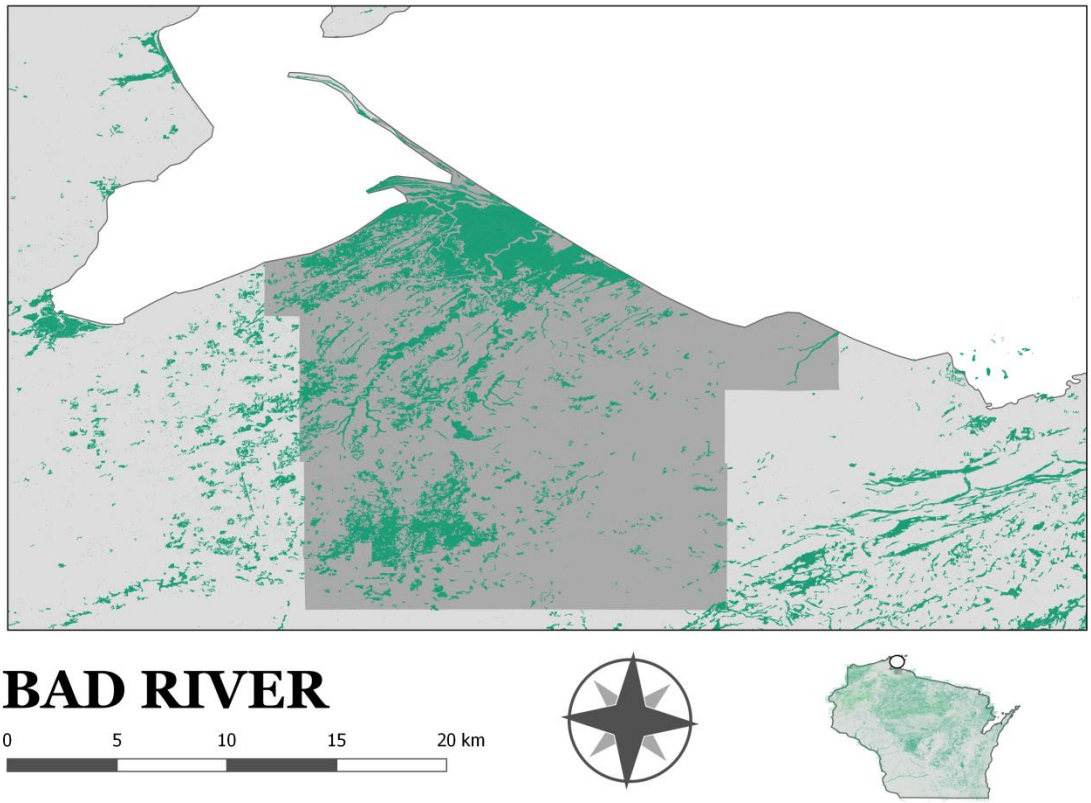
Wildlife Criteria – 19-06.150. (D) Regulated Surface Waters shall be of sufficient quality to preserve, protect, and enhance all life stages of resident and/or migratory wildlife species which live in, on, or near those waters.

Instream Flow – 19-06.150. (E). Instream flow necessary to maintain the physical, chemical, and biological integrity of Regulated Surface Waters shall not be modified if such modification will or may impair water quality or existing or designated uses.

Statutes does not apply to constructed wetlands (created for wastewater treatment), but does apply to created wetlands (created for restoration)

Bad River Band of the Lake Superior Tribe of Chippewa Indians (WI)

Bad River Reservation is located in northern Wisconsin adjacent to Lake Superior. Wetlands are explicitly included as Waters of the Tribe. A wetland-specific use as well as existing cultural, aquatic life, recreation, and commerce uses are supported by wetlands. All numeric criteria except dissolved oxygen are applicable to all named/classified waters. The narrative standard, applicable to all waters, protects to changes to water quantity or natural hydrology.



The Bad River Reservation has 25,787 acres of wetlands (in green) according to the National Wetland Inventory.

Beneficial Uses – F. Designated uses.

10. Wetland (W3). An area that will be protected and maintained for at least some of the following uses: maintaining biological diversity, preserving wildlife habitat, providing recreational activities, erosion control, groundwater recharge, low flow augmentation, storm water retention, prevention of stream sedimentation, and the propagation of wild rice.

1. Cultural (CI). Water-based activities essential to maintaining the Tribe's cultural heritage, including but not limited to ceremony, subsistence fishing, hunting and harvesting. This use includes primary and secondary contact and ingestion. Wildlife (W2)

3. Wildlife (W2). Supports the proper habitat for propagation of wildlife, which will allow the safe ingestion of any wildlife resources that provide a dietary food source for Tribal subsistence.

4. Aquatic Life and Fish (A). Supports conditions for a balanced aquatic community.

7. Recreational (R). Supports primary contact recreation and secondary contact recreation. This includes Tribal activities including water contact such as boating, hunting, fishing and harvesting. This use includes primary and secondary contact and ingestion.

*The designated use entitled Commercial (C2) and Navigation (N) apply to all waters. The designated use entitled Wetland (W3) applies to all wetlands. Waters not listed above will have the following designated uses: Cultural (C1), Wildlife (W2), Aquatic Life and Fish (A), and Recreational (R).

Narrative Standard – E. 6. Narrative Criteria

In addition to the other requirements of these Tribal water quality standards, the below Narrative Criteria apply to all waters of the Bad River Reservation. Failure to meet the below criteria constitutes an enforceable violation of these Tribal water quality standards, and no discharge that has the potential to create or support a violation of these Narrative Criteria shall be approved.

i. *Narrative criteria for aesthetic water quality*. All waters (including wetlands) within the Reservation shall be free from substances, attributable to wastewater discharges or pollutant sources resulting from other than natural background conditions, that:

a. Settle to form objectionable deposits;

b. Float as debris, scum, oil, or other matter forming nuisances;

c. Produce objectionable color, odor, taste, or turbidity;

d. Cause injury to, are toxic to, or produce adverse physiological responses in humans, animals, or plants;

e. Produce undesirable or nuisance aquatic life;

f. Produce nutrients or other substances that stimulate algal growth producing objectionable algal densities, nuisance aquatic vegetation, dominance of any nuisance species instream, or cause nuisance conditions in any other fashion; or

g. Adversely affect the natural biological community of the waterbody.

ii. General narrative criteria. These criteria apply to all waters of the Reservation (including wetlands) except as otherwise noted.

a. Pollutants shall not be present in concentrations that cause or may contribute to an adverse effect to human, plant, animal or aquatic life, or in quantities that may interfere with the normal propagation, growth and survival of indigenous aquatic biota. For toxic substances lacking published criteria, minimum criteria or values shall be calculated by the Tribe or U.S. EPA consistent with procedures specified at 40 CFR 132 Appendices A, B, C and D.

b. Levels of radioactivity shall not exceed levels expected in Tribal waters under natural background conditions.

c. Water quantity and quality that may limit the growth and propagation of, or otherwise cause or contribute to an adverse effect to wild rice, wildlife, and other flora and fauna of cultural importance to the Tribe shall be prohibited. This includes, but is not limited to, a requirement that sulfate levels shall not exceed concentrations causing or contributing to any adverse effects in waters, including those with a Wild Rice designated use.

d. Natural hydrological conditions supportive of the natural biological community, including all flora and fauna, and physical characteristics naturally present in the waterbody shall be protected to prevent any adverse effects. 14 July 6, 2011

e. Pollutants or human-induced changes to waters, the sediments of waters, or area hydrology that results in changes to the natural biological communities and wildlife habitat shall be prohibited. The migration of fish and other aquatic biota normally present shall not be hindered. Natural daily and seasonal fluctuations of flow (including naturally occurring seiche), level, stage, dissolved oxygen, pH, and temperature shall be maintained.

f. Existing mineral quality shall not be altered by municipal, industrial and in-stream activities or other waste discharges so as to in any way impair the designated uses for a water body.

g. Temperature — No measurable change (increase or decrease) in temperature from other than natural causes shall be allowed that causes or contributes to an adverse effect to the natural biological community. For those waters designated as a Cold Water Fishery, there shall be no measurable increase in temperature from other than natural causes.

h. The presence of pollutants in quantities that result in bioaccumulation in aquatic organisms that may cause or contribute to an adverse effect to consumers of aquatic organisms shall be prohibited.

Antidegradation

"Exceptional Resource Water" (Anishinaabosibiing or "good watering place") is a classification for waters considered to be of high quality and culturally important for the ecosystems they support. The purpose of this classification is to implement the Tribe's antidegradation policy. This classification is roughly equivalent to EPA's regulatory definition of a Tier 2 water under the Agency's antidegradation policy, though this classification may be more protective than the Agency's policy. Any surface water not specifically classified as Outstanding Tribal Resource Water or Outstanding Resource Water is classified as Exceptional Resource Water (Anishinaabosibiing).

"Outstanding Resource Water" (Chi minosibii or "large good river") is a classification for those waters so designated in the antidegradation policy that are considered to be of high quality and culturally important for the fisheries and ecosystems they support. This classification is more stringent than EPA's Tier 2 classification and could be described as a Tier 2.5 water under the Agency's antidegradation policy. 28. "Outstanding Tribal Resource Water" (Chi minosingbii or "best waters") is a classification for those waters so designated in the antidegradation policy that are considered largely pristine and constitute a significantly important cultural and ecological resource. These waters are important for the cultivation of wild rice or the spawning of lake sturgeon, or have other special resource values. This classification is roughly equivalent to EPA's Tier 3 classification under its antidegradation policy, though this classification may be more protective than the Agency's policy.

Wetland Definition – "Wetland" means an area that is inundated or saturated at or near the surface caused by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in aquatic or saturated soil conditions, commonly known as hydrophytic vegetation.

Definitions – 5. "Background conditions" means the biological, chemical, and physical conditions of a water body, including flow, that existed prior to a point or nonpoint source discharge(s) or would exist in the absence of such discharge(s)

Numeric Criteria – E.7 *Specific numeric criteria*. These criteria apply to all waters (including wetlands), except as otherwise noted:

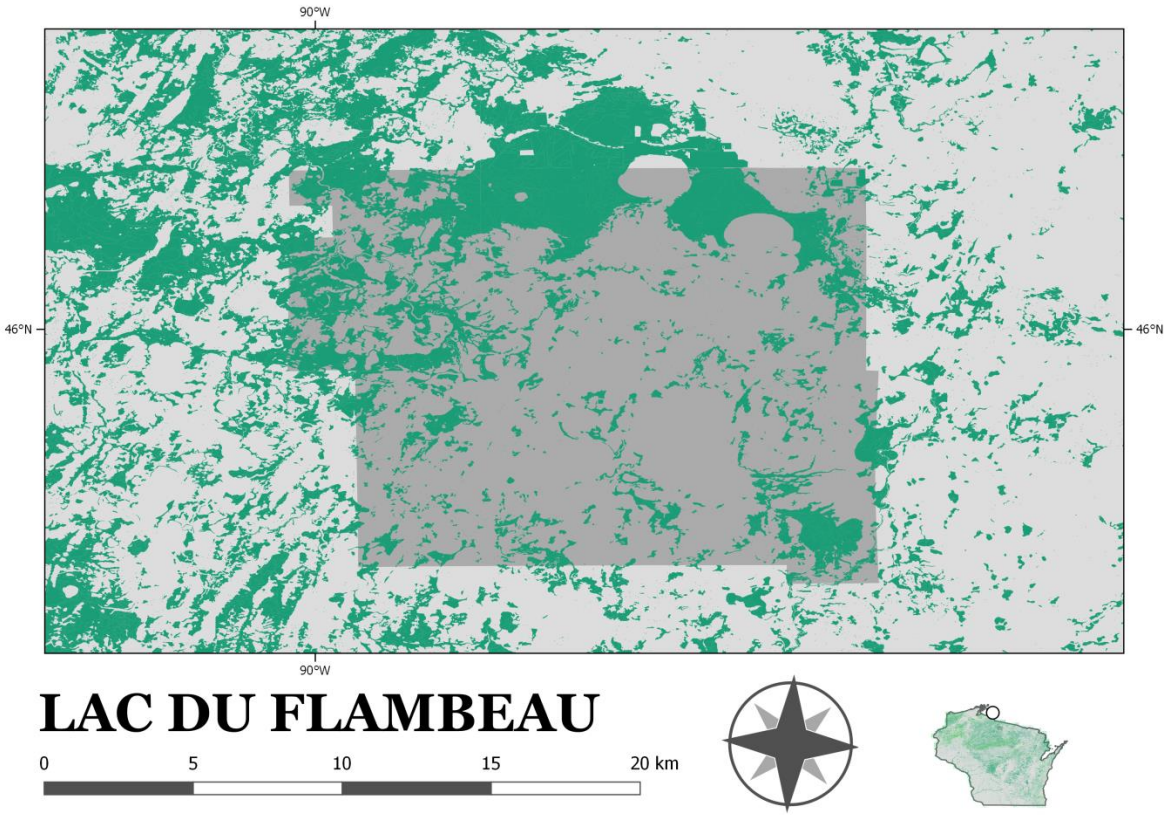
i. Dissolved oxygen – Unless otherwise demonstrated through a use attainability analysis or site-specific criterion that aquatic life cannot be supported, a water body capable of supporting aquatic life shall have a daily minimum dissolved oxygen standard of 5 mg/L in all cases except waters designated as a Cold Water Fishery. [...] These criteria will not apply to the Kakagon Sloughs, Bad River Sloughs, and wetlands due to their natural conditions.

No exceptions for pH, Turbidity, Bacteriological Water Quality Criteria in wetlands

H. Numeric water quality criteria – adopt criteria and methodologies from the Great Lake Guidance, 40 CFR 132.6.

Lac du Flambeau (WI)

The Lac du Flambeau reservation is located in northern Wisconsin. The tribal code specifies the uses that apply to wetlands separately from classifying other waters (all uses but cold/cool water fisheries and domestic supply). Antidegradation statute specifies named waters, including wetlands, are Tier 2 waters, unnamed are Tier 1. Narrative standard has additional criteria for wildlife use and hydrological criteria for wetlands.



The Lac du Flambeau reservation has 26,111 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – 104.B Designated Uses that apply to wetlands:

(1) Fish and Aquatic Life. Water quality necessary to support a balanced aquatic life community, and to protect the gathering of aquatic resources for food, medicinal, or crafting purposes.

(2) Water Contact. Secondary contact (skin in direct contact but not to the point of submergence or ingestion), for the protection of recreation, ceremonies, and cultural activities.

(3) Wildlife Protection. Water quality necessary to support the propagation and maintenance of wildlife that utilize aquatic resources as a food source.

(4) Wild Rice. Supporting wild rice habitat for sustainable growth and consumption.

(5) Water Supply. Supports the use of water for industrial, agricultural, or aquacultural purposes.

At the boundary between wetlands of different designated uses, the water quality criteria necessary to protect the more sensitive use of uses shall apply.

Narrative Standard – 105.A General Water Quality Criteria

All Reservation waters (including wetlands), except as otherwise noted, shall be free from pollutants that cause or contribute to the conditions described below:

(1) Substances dispersed in Reservation waters causing objectionable deposits on the shore or in the bed of a waterbody in such amounts as to interfere with designated uses or existing uses on waters of the Reservation.

(2) Floating or submerged debris, oil, scum or other substance in such amounts as to interfere with designated uses and existing uses on waters of the Reservation.

(3) Substances producing color, odor, taste or unsightliness in such amounts as to interfere with designated uses and existing uses on waters of the Reservation.

(4) Toxic substances shall not be present in concentrations that are toxic or harmful to human, animal, plant or aquatic life, or in quantities that interfere with the normal propagation, growth and survival of the sensitive indigenous aquatic biota (limited exceptions may be granted to these prohibited conditions but then only within designated mixing zones). For toxic substances lacking published criteria, Bioassay data for sensitive indigenous test species/life stages may be used to determine compliance with this narrative standard.

(5) Water quality that limits the growth and propagation of native vegetation.

(6) Toxic, radioactive (except those regulated under the atomic energy act (AEA) of 1954, as amended (42 U.S.C. 2011 et seq.), nonconventional, or deleterious material concentrations that have public health significance, or that may cause acute or chronic toxic conditions to the aquatic biota, or that may adversely affect designated uses.

(7) Conditions that produce undesirable or nuisance aquatic life.

C. Biological Criteria.

(1) All waters of the Reservation shall maintain a natural diverse biological community; therefore aquatic life shall be as it naturally occurs.

(2) The overall biological community may not be adversely affected by the discharge of water for industrial, municipal, or agricultural purposes, or by the discharge of pollutants to the water.

(3) Natural hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands shall be protected to prevent significant adverse impacts on.

(A) Water currents, erosion or sedimentation patterns; 9 136107.1

(B) Natural water temperature variations;

(C) The chemical, nutrient and dissolved oxygen regime of the wetland;

(D) The normal movement of aquatic fauna;

(E) The pH of the wetland; and

(F) Normal water levels or elevations.

D. Water Quality Criteria for the protection of Wildlife.

(1) Pollutants shall not be found in Reservation waters at or exceeding concentrations that result in adverse effects to the Reservation's wildlife populations.

Antidegradation – 107. Specific water body classifications

(1) All named waters, including wetlands, not specified under an Antidegradation classification are classified as Tribal Resource Water (Tier 2).

(2) All unnamed waterbodies including wetlands, at a minimum, are classified as Tier 1 and assigned the following designated uses (until such a time that additional uses are identified): Water Contact, Wildlife Protection, Wild Rice, Fish and Aquatic life, and Water Supply.

Wetland Definition – 40 CFR §116.3

Sokagon Chippewa Community (WI)

The Sokagon Chippewa Community is located in northern Wisconsin. All reservation waters support all designated uses, all waters are Tier 3 ONRW except Wetland 22, which is Tier 2.9 Exceptional High Quality Water.

The Sokagon Reservation has 1,717 acres of wetlands (in green) according to the National Wetland Inventory.

Designated Uses – B. [151.11] Designated Uses:

1) Cultural: Use of All Tribal Waters for cultural, subsistence, spiritual, medicinal, ceremonial, and aesthetic purposes that include any element of the environment that is ecologically associated with Tribal Waters

2) Recreation

a) Primary Contact Recreational: Use of All Tribal Waters for prolonged contact by humans, allowing the possibility of ingestion of water in quantities sufficient to pose a health hazard.

b) Secondary Contact Recreational: Use of All Tribal Waters for activities which may, but need not, involve minimal ingestion of water.

3) Public Water Supply: Use of All Tribal Waters except Wetland 22, prior to treatment, as a public drinking water source or for food processing.

4) Commercial: Use of All Tribal Waters for commercial purposes.

5) Agricultural/Forestry: Use of All Tribal Waters in forestry and/or agricultural practices.

6) Navigation: All Tribal Waters shall be of sufficient quality for navigation to occur.

7) Aquatic Life; Use of All Tribal Waters for any organisms indigenous to the environment that is ecologically associated with Tribal Waters for the purpose of healthy existence, continued survival, ecological support and furthermore use of all Tribal Waters for physical, chemical and biological support they provide as habitat and life support to aquatic organisms including but not limited to fish and shellfish.

8) Wildlife: Use of all Tribal Waters for physical, chemical and biological support they provide as habitat and life support to wildlife organisms.

Narrative Standard – A. [151.20] Narrative Water Quality Criteria

The following conditions in Tribal Waters are prohibited

1) The presence of pollutants in quantities that result in unnatural color, oil films or slicks, floating solids, scum, foams, settled solids, suspended solids or deposits in Tribal Waters or on or within the beds of Tribal Waters.

2) The presence of pollutants in quantities that result in objectionable taste or odor being imparted to either Tribal Waters or organisms living in it or drinking from it.

3) The presence of pollutants in quantities that result in toxicity to aquatic organisms, wildlife, domestic animals or humans.

4) The presence of pollutants in quantities that result in bioaccumulation in aquatic organisms leading to toxicity to consumers of the aquatic organism.

5) The presence of pollutants that act as nutrients to plants in quantities that result in the growth of nuisance algae and plants.

6) The presence of bacteria and/or microorganisms at levels that may impair Tribal Water's Designated and Existing Uses, including but not limited to: potential drinking water use, recreational use, subsistence fishing and wild rice gathering use and cultural or ceremonial uses.

7) Releases of pollutants or human-induced changes to Tribal Waters, the sediments of Tribal Waters or area hydrology that alter natural ambient conditions in Tribal Waters such as, without limitation, flow, stage, dissolved oxygen, pH, and temperature. Natural daily fluctuations of flow, stage, dissolved oxygen, pH and temperature shall be maintained.

8) Releases of pollutants or human-induced changes to Tribal Waters, the sediments of Tribal Waters or area hydrology that result in changes to species composition in Tribal Waters, on the Reservation or in the Ceded Territory. Naturally occurring assemblages of organisms in Tribal Waters shall be maintained.

Antidegradation –[*strong antidegradation protections for all waters]* all Tribal Waters (*with one exception*) are Tier 3 Outstanding National Resource Waters [...] These areas serve as the last refuge for tribal members to continue to practice a life that exemplifies sustainable economic development, and that preserves the resources critical to cultural integrity and survival of the Tribe. Tribal Waters have exceptional cultural, religious, social, ecological and recreational attributes of national significance with respect to rare ecological species and the culturally unique Native American community dependent on them. Tribal Waters are also classified ONRW to further protect the downstream ONRW classification of the Wolf River.

Tier 2.9 Exceptional High Quality Water (EHQW) Classification: One Tribal Water, Wetland 22, is classified as EHQW. It is a high-quality water body of significant cultural, religious, social, ecological and recreational attributes.

Wetland Definition – 40 CFR §116.3 + algae and cattails identified as hydrophytic vegetation

**Each of the Designated Uses listed are applied to all Tribal Waters.*

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Development of Statewide Water Quality Standards for Utah Wetlands

Appendix C: Templates for Developing Wetland Water Quality Standards

What's included in this Appendix

This appendix contains wetland water quality standards (WQS) for wetlands based on the Environmental Protection Agency's Templates for Developing Water Quality Standards, found online at https://www.epa.gov/wqs-tech/templates-developing-wetland-water-quality-standards. Section 1 contains the designated beneficial use, narrative criteria, and antidegradation rules for wetlands based on the template. Section 2 details the choices to be made before the template can be use.

Section 1 – Utah Wetland Water Quality Standard

Designated Uses

For all wetlands, as defined by the [state-defined] classification scheme, the uses to be protected include but are not limited to: recreation† and water-dependent wildlife† to the extent that such uses occur as represented by reference wetlands.

Criteria

All wetlands, as defined by the [state-defined] classification scheme, shall maintain biological, physical, chemical, and hydrological conditions - as determined by reference wetlands - including, but not limited to: base flow, flow regime, wetland hydroperiod; chemical, nutrient, dissolved oxygen regime of the wetland; conditions favorable to protection propagation of threatened, endangered, at-risk species; conductivity; floristic quality; integrity of species diversity, abundance, zonation; normal movement of fauna; pH of wetland waters; salinity; size shape; soil type horizon structure; water currents, erosion, or sedimentation patterns; water levels or elevations; and water temperature variations.

Antidegradation

Tier I: For all wetlands, using the [state-defined] classification scheme, there shall be no degradation of existing uses.

Tier II: Using the [state-defined] classification scheme: there shall be no net loss to the water quality or functions of high quality wetlands, unless, after satisfying applicable antidegradation provisions including avoidance, minimization, and mitigation/replacement requirements, the state determines that allowing degradation is necessary to accommodate important social or economic development in the area in which the wetlands are located.

Tier III: There shall be no loss to the water quality or functions of wetlands designated as outstanding national resource waters, as per applicable Tier III requirements.

Section 2 – Wetland Water Quality Standard Choices

Uses

- For [all] wetlands: that's our goal, not uses for some wetlands
- [state-defined] classification scheme: because we have UGS and UDWQ reports on wetland classes important in the state that don't follow either Cowardin or HGM.
- Uses to be protected include but are not limited to: [recreation and water-dependent wildlife]: it's what the stakeholders and current uses suggest
- To the extent that such [uses] occur: don't measure functions or values in other waters
- As represented by [reference wetlands]: seems right

Criteria

- [All] wetlands: that's our goal
- Shall maintain [Biological, physical, chemical, and hydrological conditions]: important for wetlands
- As determined by [reference wetlands]: seemed right
- Including, but not limited to [select all]: all important

Antidegradation

- No net loss of: chose functions instead of values, area or ecological integrity because UGS is working on a functional assessment, we don't have a way to assess values and ecological integrity definitions are only developed for one class of wetlands.