



NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**

2024 Surface Water Quality Standards Triennial Review

Bureau of Water Quality Planning (BWQP)
Standards, Assessment, and Monitoring Branch
(SAM)

December 16th, 2024

Seth Alm and Bryceton Schilling
Standards, Assessment, and Monitoring Branch

Lamoille Creek, Elko County, NV

NDEP.nv.gov |    @NevDCNR

INTRODUCTION

NEVADA 2024 TRIENNIAL REVIEW

This meeting is being held in-person and virtually via TEAMS

- Meeting is being recorded and transcribed
- To comment online please raise your hand or use the “chat” function

Slides are available on the NDEP website

- <https://ndep.nv.gov/water/rivers-streams-lakes/water-quality-standards/triennial-review>

Written comments accepted until January 17th, 2025

INTRODUCTION

NEVADA 2024 TRIENNIAL REVIEW

This meeting is to solicit public input on Nevada's Surface Water Quality Standards Program

- Surface water quality standards (NAC 445A.11704-2234)
- Surface water quality assessment (Integrated Reports 303(d)/305(b))
- Surface water monitoring
- Future standards actions

No items will be voted on and no actions will be taken during this meeting

OUTLINE

NEVADA 2024 TRIENNIAL REVIEW

- Clean Water Act
- Water Quality Programs
 - Standards
 - Assessment
 - Monitoring
- Recent Standards Actions
- Planned Future Work
- TMDL Development
- Comments
- Meeting Adjourned



CLEAN WATER ACT

NEVADA 2024 TRIENNIAL REVIEW

Objective

- “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters”

Goal

- To attain “fishable and swimmable” conditions wherever possible

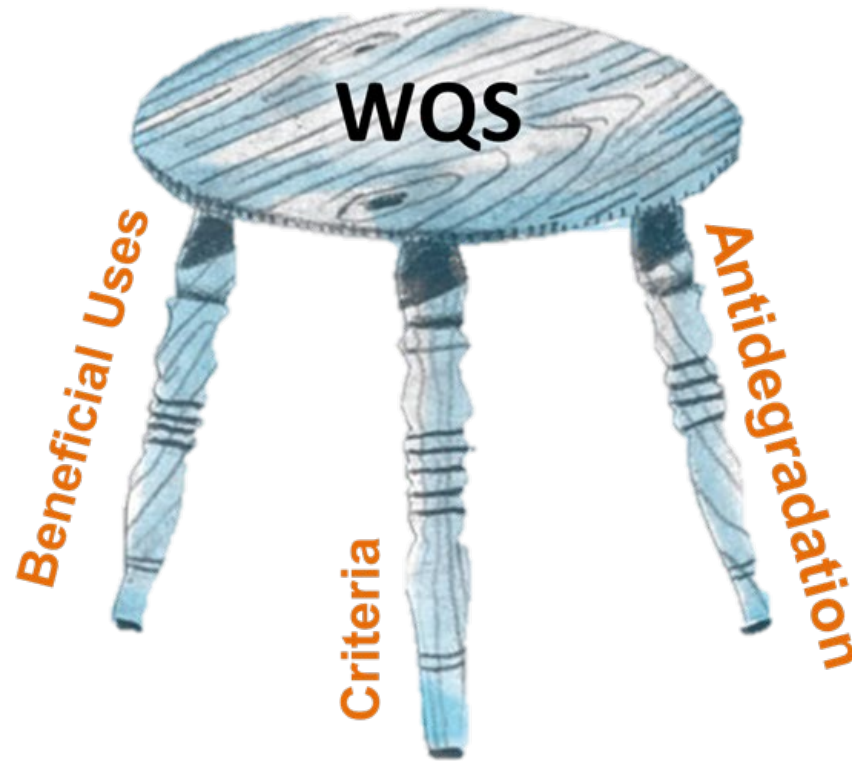
Purpose

- Protect public health and welfare, enhance quality of water



NEVADA SURFACE WATER QUALITY STANDARDS

NEVADA 2024 TRIENNIAL REVIEW



A water quality standard (WQS) is a three-legged stool.

NEVADA SURFACE WATER QUALITY STANDARDS

BENEFICIAL USES

NAC 445A.122 Standards applicable to beneficial uses

1. The following standards are intended to protect both existing and designated beneficial uses and must not be used to prohibit the use of the water as authorized under title 48 of NRS:
 - (a) Watering of livestock
 - (b) Irrigation
 - (c) Aquatic life
 - (d) Recreation involving contact with the water
 - (e) Recreation not involving contact with the water
 - (f) Municipal or domestic supply
 - (g) Industrial supply
 - (h) Propagation of wildlife
 - (i) Extraordinary aesthetic, ecological or recreational value
 - (j) Enhancement of water quality
 - (k) Maintenance of a freshwater marsh
2. This section does not entitle an appropriator to require the source meet his or her particular requirements for water quality.



NEVADA SURFACE WATER QUALITY STANDARDS CRITERIA

STANDARDS OF WATER QUALITY Las Vegas Wash at the Historic Lateral

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY CRITERIA TO PROTECT BENEFICIAL USES	Beneficial Uses ^a											
			Livestock	Irrigation	Aquatic	Contact	Noncontact	Municipal	Industrial	Wildlife	Aesthetic	Enhance	Marsh	
Beneficial Uses			X	X	X		X				X			X
Aquatic Life Species of Concern			Warm-water fish. †											
Temperature ΔT^b - °C	$\Delta T = 0$	S.V. $\leq 34^\circ$			*									
pH - SU		S.V. 6.5 - 9.0			*									
Dissolved Oxygen - mg/L		S.V. ≥ 5.0			*									
Total Inorganic Nitrogen (as N) - mg/L	95% of S.V. samples ≤ 20				*									
Nitrate (as N) - mg/L		S.V. ≤ 90			*									
Nitrite (as N) - mg/L		S.V. ≤ 5			*									
Total Suspended Solids - mg/L		S.V. $\leq 135^c$			*									
Total Dissolved Solids - mg/L	95% of S.V. samples ≤ 1900	S.V. ≤ 3000	*											
Fecal Coliform No./100 mL		d												*
E. coli - cfu/100 mL		A.G.M. ≤ 630						*						
Toxic Materials		e												



X = Beneficial use is applicable to the waterbody.

* = The most restrictive beneficial use.

NEVADA SURFACE WATER QUALITY STANDARDS

ANTIDEGRADATION

- Antidegradation is a program to maintain and protect the existing quality and preserve the unique attributes and conditions of high-quality waters.
- Nevada's antidegradation regulation is consistent with [40 CFR 131.12](#)



Marlette Lake, Washoe County, NV



NEVADA SURFACE WATER QUALITY STANDARDS

WATER QUALITY STANDARD REVISION PROCESS

Steps NDEP follows to adopt new or amend existing Standards

- Obtain baseline knowledge
- Determine beneficial uses
- Review of National criteria
- Draft regulation and rationale to support proposed changes
- Conduct public workshops and incorporate comments as appropriate
- Present proposed regulation to the State Environmental Commission
- Obtain approval by State Legislative Committee

- Submittal to EPA for final approval

NEVADA SURFACE WATER QUALITY MONITORING

AMBIENT SURFACE WATER QUALITY

Monitoring Strategy

- Long Term – established sites on mainstem waters sampled twice yearly
- Focus Basin – intensified sampling in the West portion of the Central Region
- Special Projects – expanding continuous thermal logger network
- Bioassessment and Harmful Algal Blooms



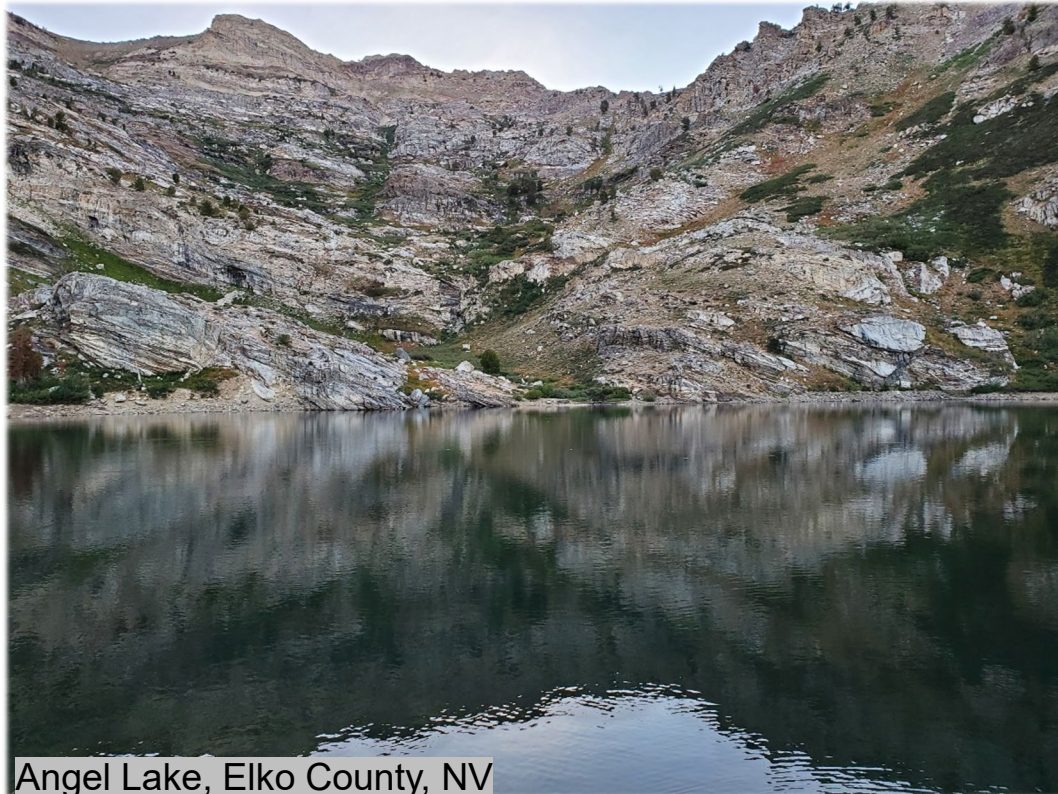
Knott Creek Reservoir, Humboldt County, NV

NEVADA SURFACE WATER QUALITY MONITORING

BIOLOGICAL ASSESSMENT AND HARMFUL ALGAL BLOOMS

Bioassessment Branch

- Branch was created since the last triennial review
- Conduct biological assessments to determine the ecological integrity of rivers, streams, lakes, wetlands



Angel Lake, Elko County, NV

NEVADA SURFACE WATER QUALITY MONITORING

BIOLOGICAL ASSESSMENT AND HARMFUL ALGAL BLOOMS

Harmful Algal Blooms

- Coordinating agency of the Nevada HAB taskforce
- In coordination with partner agencies, conducts monitoring for algal toxins
- Based on available information, Nevada Office of State Epidemiology may issue health advisories
- <https://ndep.nv.gov/water/rivers-streams-lakes/water-quality-monitoring/harmful-algal-bloom-program>

NEVADA HARMFUL ALGAL BLOOM (HAB) ADVISORY LEVEL DETERMINATION

Advisory Level	Visual Presence?	Cyanotoxin Concentration (µg/l)*			Recommended Action
		Microcystin	Cylindrospermopsin	Anatoxin-a	
None	<input type="checkbox"/>	< 4	< 8	< 1	None
HAB WATCH	<input checked="" type="checkbox"/>	4 to <8	8 to <15	1 to <20	Post signage, issue press release, post advisory on Nevada State Health Dept HAB Dashboard
HAB WARNING	<input checked="" type="checkbox"/>	8 to <2000	15 to <17	20 to <90	Above + restrict direct contact with water
HAB DANGER	<input checked="" type="checkbox"/>	> 2000	> 17	> 90	Above + close portions/entire waterbody

* If cyanotoxin concentrations occur within multiple advisory levels, the highest advisory level applies

NEVADA INTEGRATED REPORTS

NEVADA 2024 TRIENNIAL REVIEW

NDEP submits a report to EPA every two years

- Required under CWA provisions
- Significant effort to compile and assess readily available data
- EPA has approval authority of the 303(d) list of impaired waters



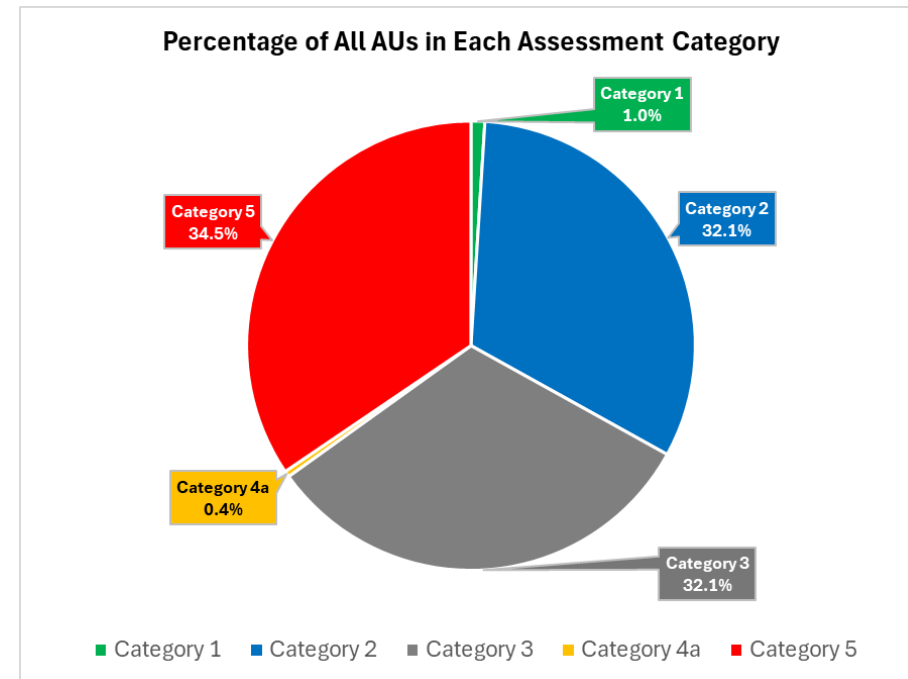
South Fork Humboldt River, Elko County, NV

NEVADA INTEGRATED REPORTS

DRAFT NEVADA 2024 INTEGRATED REPORT

Draft Nevada 2024 IR

- Draft report will be available for public review early 2025
- The overall statistics remain similar to previous reports



RECENT WATER QUALITY STANDARDS ACTIONS

NEVADA 2024 TRIENNIAL REVIEW

R115-22: Las Vegas Wash Tributaries Designation

- Designated 7 waters that are tributary to the Las Vegas Wash (beneficial use designation and criteria)
- Did not designate the “Aquatic Life” beneficial use, and is supported by a Use Attainability Analysis document
- Approved by the State December 2022, awaiting EPA final approval

RECENT WATER QUALITY STANDARDS ACTIONS

NEVADA 2024 TRIENNIAL REVIEW

R116-22: Las Vegas Wash Site Specific Criteria for Selenium

- Establishes criteria for selenium specific to segments of the Las Vegas Wash
- New criteria reflects naturally occurring elevated selenium concentrations
- Approved by the State April 2024, awaiting EPA final approval



Las Vegas Wash, Clark County, NV

RECENT WATER QUALITY STANDARDS ACTIONS

NEVADA 2024 TRIENNIAL REVIEW

R114-22: Beryllium

- Updated the criterion for Beryllium protecting the Municipal and Domestic Supply beneficial use.
- Updated language in NAC 445A.1236 relating to analytical laboratory screening levels and applicability for compliance with a standard.
- Approved by EPA December 2023.



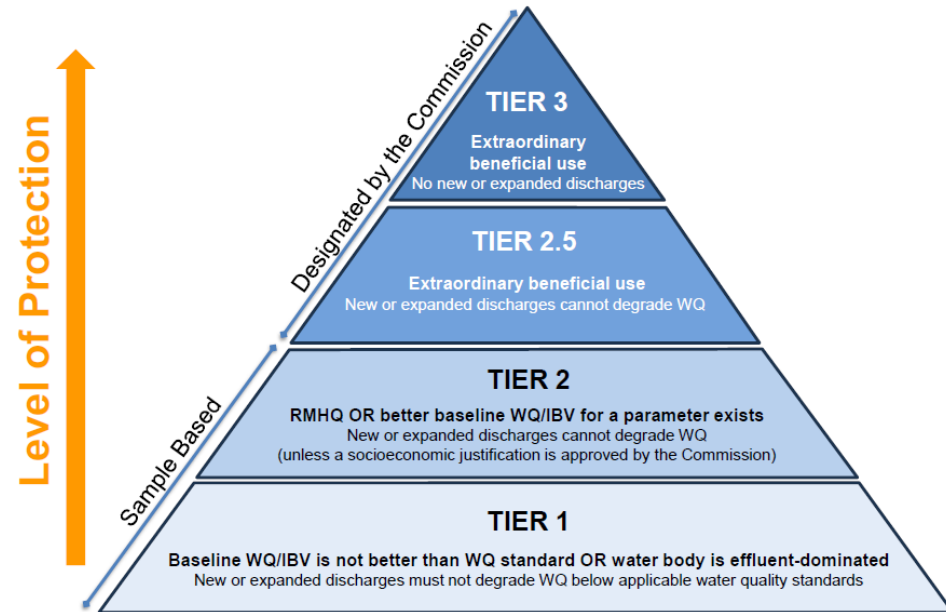
Horse Canyon Creek, Churchill County, NV

RECENT WATER QUALITY STANDARDS ACTIONS

NEVADA 2024 TRIENNIAL REVIEW

R113-22: Antidegradation

- Establishes a codified framework for Nevada's antidegradation provisions and defines tiered levels of protection
- This regulation conforms with requirements in 40 CFR 131.12
- Antidegradation review is completed during the surface discharge permitting process
- Approved by the State April 2024, awaiting EPA final approval



PLANNED FUTURE WORK

PROPOSED R146-24

R146-24: Colorado River Salinity

- Adopts by reference salinity standards adopted by the Colorado River Basin Salinity Control Forum.
- Makes conforming changes to remove offensive terms from water quality regulations

2. ~~Pursuant to~~ *Except as otherwise provided in subsection 3, the Commission hereby adopts by reference* the ~~2017~~ *most current version of* “Review - Water Quality Standards for Salinity, Colorado River System,” ~~as~~ adopted by the Colorado River Basin Salinity Control Forum ~~, the flow-weighted annual average concentrations for the calendar year for total dissolved solids in mg/L at the three lower main stem stations of the Colorado River are as follows:~~

PLANNED FUTURE WORK

PROPOSED R147-24

R147-24: Carson River

- Amends the beneficial use subcategory from “coldwater fishery” to “warmwater fishery” for certain reaches of the Carson River in Carson Valley.
- Designates waters tributary to affected reaches.

STANDARDS OF WATER QUALITY

Carson River at the Mexican Ditch Gage

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY CRITERIA TO PROTECT BENEFICIAL USES	Beneficial Uses ^a												
			Livestock	Irrigation	Aquatic	Contact	Noncontact	Municipal	Industrial	Wildlife	Aesthetic	Enhance	Marsh		
Beneficial Uses			X	X	X	X	X	X	X	X					
Aquatic Life Species of Concern			[Rainbow trout and brown trout.] <i>Native warm-water species</i>												
Temperature - °C		S.V. [Nov-Apr] ≤ 13 S.V. [May-Jun] ≤ 17 S.V. [Jul-Oct] ≤ 23 28			*										
ΔT ^b - °C	ΔT=0	ΔT ≤ 2			*										
pH - SU	S.V. 7.4 - 8.5	S.V. 6.5 - 9.0 ΔpH ± 0.5			*										
Dissolved Oxygen - mg/L		S.V. Nov-Apr ≥ 6.0 S.V. May-Oct ≥ 5.0			*										
Total Phosphorus (as P) -															

PLANNED FUTURE WORK

PROPOSED R148-24

R148-24: Lake Tahoe Tier Designation

- Designates Lake Tahoe with a Tier 3 level of antidegradation protection.
- Aligns with bordering state designation.

445A.1626 The limits of this table apply to the body of water known as Lake Tahoe for ~~fits~~ ~~existing sampling points. This segment of~~ *the portion located in Nevada.* Lake Tahoe is located in Carson City and Douglas and Washoe Counties. *Pursuant to section 2 of LCB File No. R113-22, the Commission designates Lake Tahoe to have a tier 3 level of antidegradation protection.*

STANDARDS OF WATER QUALITY

Lake Tahoe

PARAMETER	REQUIREMENTS TO MAINTAIN EXISTING HIGHER QUALITY	WATER QUALITY CRITERIA TO PROTECT BENEFICIAL USES	Beneficial Uses ^a											
			Livestock	Irrigation	Aquatic	Contact	Noncontact	Municipal	Industrial	Wildlife	Aesthetic /	Enhance	Marsh	
Beneficial Uses			X	X	X	X	X	X	X	X	X			
Aquatic Life Species of Concern			Cold-water fishery.											

PLANNED FUTURE WORK

PROPOSED R149-24

R149-24: Algal Toxins

- Establishes numeric criteria for cylindrospermopsin and microcystins (algal toxins) relating to the recreation involving contact with the water beneficial uses.
- Amends NAC 445A.1236 to include the “recreation involving contact with the water” beneficial use.

Chemical	Municipal or Domestic Supply (µg/L)	Aquatic Life ^(1,2) (µg/L)	Irrigation (µg/L)	Watering of Livestock (µg/L)	Recreation Involving Contact With the Water (µg/L)
<i>Microcystin</i>	-	-	-	-	<i>8j,k(8)</i>
<i>Cylindrospermopsin</i>	-	-	-	-	<i>15j,k(8)</i>

PLANNED FUTURE WORK

BIOASSESSMENT INDICES DEVELOPMENT

Bioassessment Program

- Developing indices and associated benchmarks for assessing overall waterbody biological health.
- Upgrading BWQP's database to store all bioassessment and HAB program data. Data will be publicly available via NDEP's database
- Scores will be used to inform future 303(d) and 305(b) assessments, making results more representative of conditions aquatic life encounter



TMDL

NEVADA 2024 TRIENNIAL REVIEW

A TMDL is a plan to improve and maintain water quality.

States are required by the CWA to develop TMDL's for all water/pollutant combinations identified on the states 303(d) list.

A Total Maximum Daily Load (TMDL) is the calculated maximum amount of a pollutant permissible to enter a waterbody so that the water will meet and continue to meet water quality standards. The document will identify all source(s) of the pollutant and set a pollutant reduction target.

TMDL

NEVADA 2024 TRIENNIAL REVIEW

NDEP is currently developing a statewide bacteria TMDL for 33 waters identified on the Nevada 2022 Surface Water Quality Integrated Report.

NDEP is investigating developing a statewide nutrient TMDL for waters impaired for phosphorus and having a bacteria impairment.

BWQP CONTACTS

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NEVADA WATER QUALITY STANDARDS TRIENNIAL REVIEW

**Comments accepted until
January 17th, 2025**

**Submit comments to:
ndep-sam@ndep.nv.gov**



Sweetwater Creek, Lyon County, NV

Questions?



Contact

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