

# 2017 Triennial Review of Idaho Water Quality Standards

**April 11, 2017**  
**DEQ State Office**  
**Boise**

**April 18, 2017**  
**DEQ**  
**Pocatello**  
**Regional Office**

**May 2, 2017**  
**DEQ**  
**Coeur d'Alene**  
**Regional Office**



# Goal

- To meet Clean Water Act requirements by engaging stakeholders and identifying priorities for Water Quality Standards rulemaking and sub-program development for the next 3+ years



# Objectives

- Provide background on:
  - Why Triennial Review
  - Idaho DEQ's Water Quality Standards sub-program
  - The Clean Water Act and Water Quality Standards
  - Idaho's rulemaking process

# Objectives

- Describe the 2017 Triennial Review Process
  - What it is, and what it is not
  - Timeline
  - Review of 2014 Triennial Review and progress
- Review of WQS issues identified by DEQ
- Discussion

# Why Triennial Review?

- Process mandated by Clean Water Act 303(c)(1) and in 40CFR 131.20
- An opportunity for the public to advise on priorities
- An opportunity for DEQ to inform public on WQS issues

# Deliverable

- Final report of findings completed by November 2017



# Idaho DEQ's Water Quality Standards sub-program

- Water Quality Standards staff
  - Jason Pappani – WQS Lead
  - Stephanie Jenkins – WQS Scientist
  - Brian Reese – WQS Analyst
  - Ian Wigger – WQS Analyst

# Rulemaking

- Copper criteria for aquatic life
- Selenium criteria for aquatic life





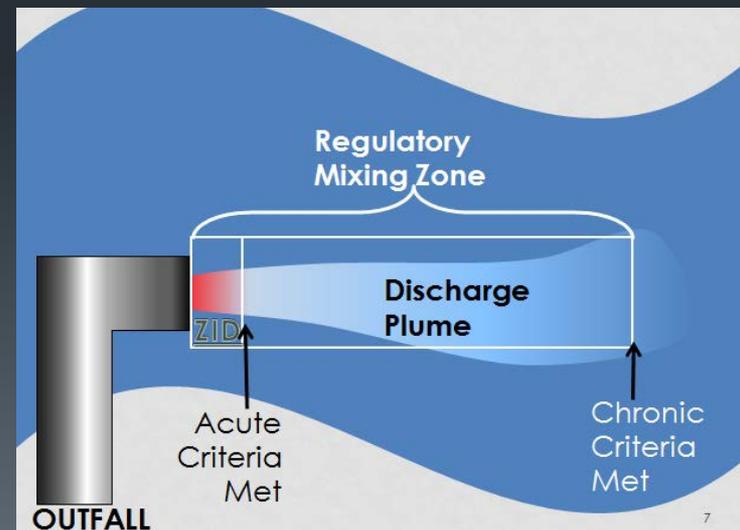
# Guidance Development

- Antidegradation: June 2017
- Use Designation / UAA: July 2017
- Natural Background Conditions: August 2017
- Copper Aquatic Life / Biotic Ligand Model: November 2017

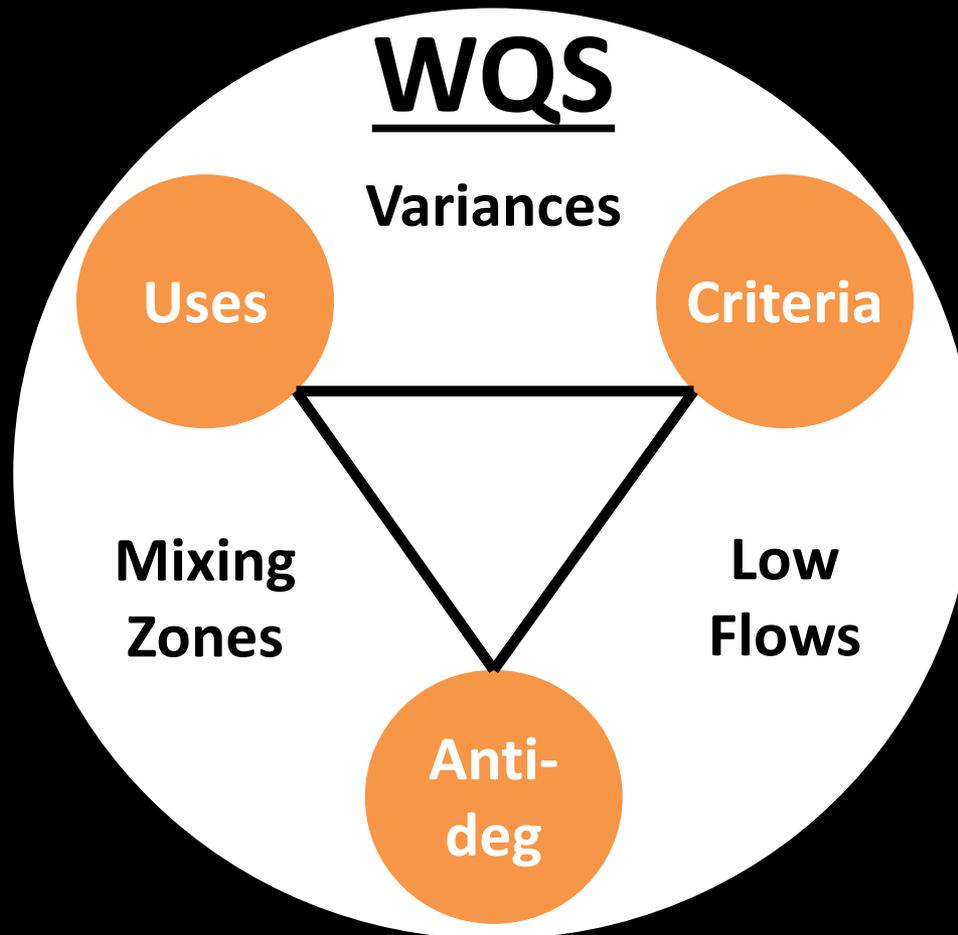
# Harmful Algal Blooms Response Coordination



# Mixing Zone Rule Consultation



# The Clean Water Act and Water Quality Standards



# Beneficial Uses

- Categories of Uses
  - Federally required:
    - Addresses the fishable/swimmable goals of the CWA
    - Set the goals for the water body
  - State discretion:
    - Other beneficial uses include water supply, wildlife and aesthetics



# Beneficial Uses

- Designated in rule
- Existing
- Presumed use protection



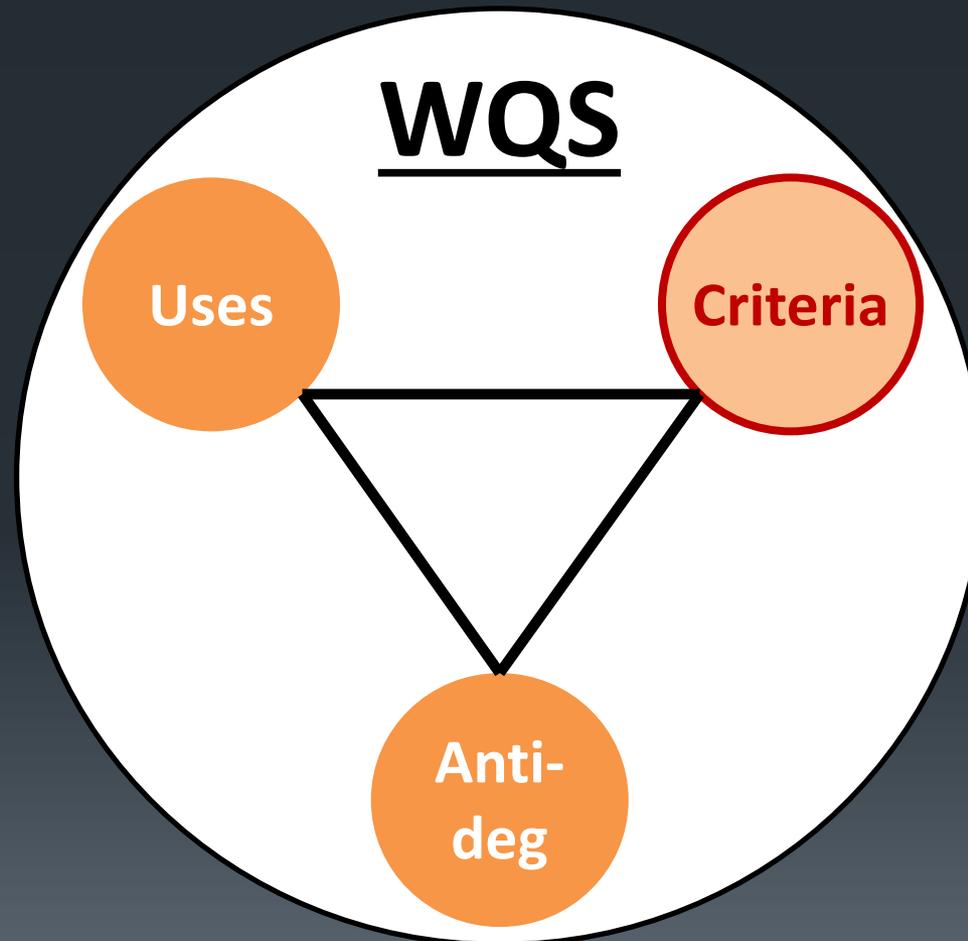
# Undesignated Waters

- About 70% of stream length in Idaho is not specifically designated
- Undesignated surface waters are presumed to support cold water aquatic life and recreation
- Undesignated surface waters are protected for these “presumed” uses

# Changing a Use Designation

- Use Attainability Analysis (UAA)
- Requires rulemaking to revise use
- Cannot remove an existing use

# WQS Required Elements



# We Protect Designated Uses through Criteria

- States must adopt criteria that protect the designated use
- Must be based on sound science



# Water Quality Criteria

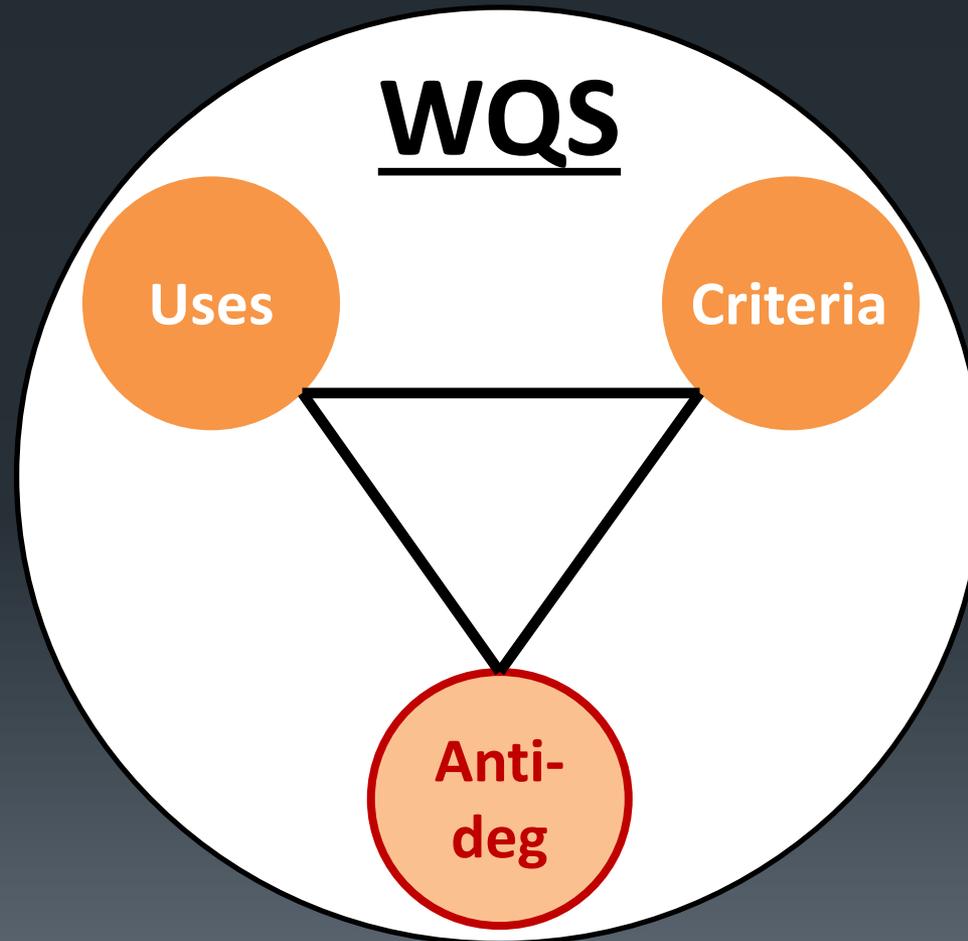
- Narrative
- Numeric



# Criteria Development

- EPA recommended criteria (304a)
- State adopts or modifies
- Idaho law limits DEQ's ability to be more stringent than required by CWA
- Adopted criteria subject to EPA approval and, if approved, ESA consultation

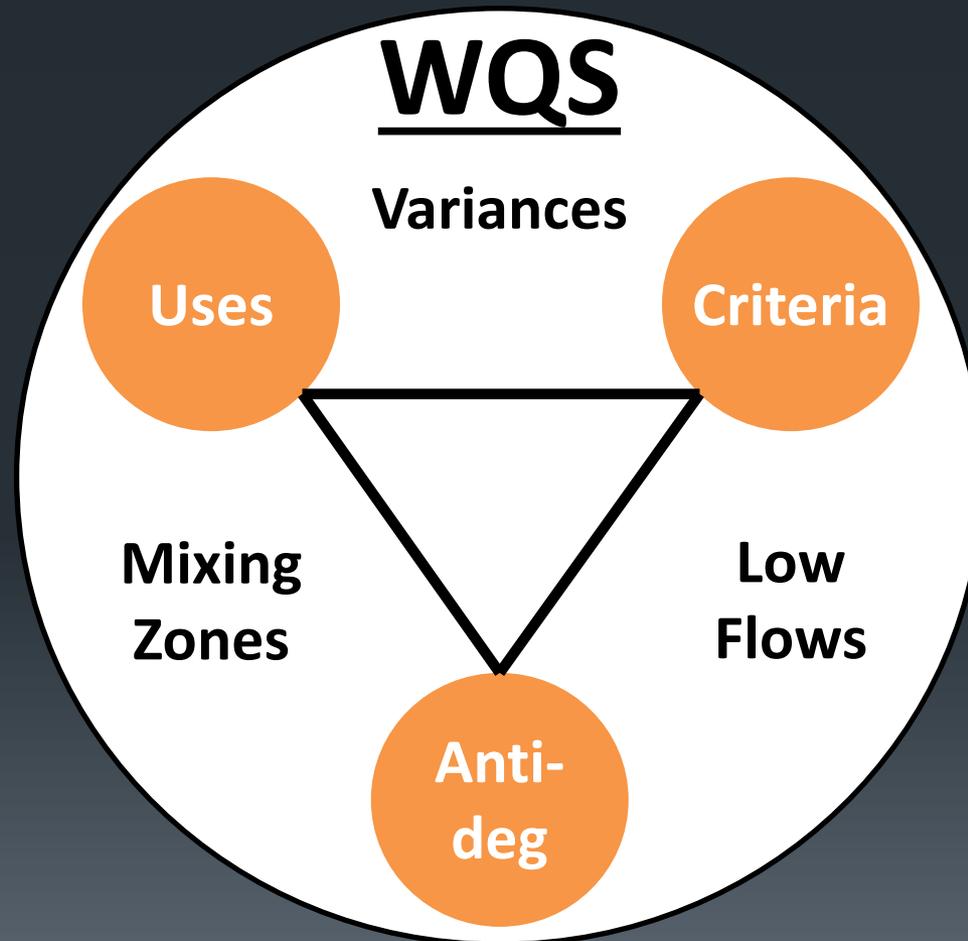
# WQS Required Elements



# Antidegradation

- Maintains and Protects existing beneficial uses
- Proposed new or increased discharge to high quality waters must be shown to provide important social or economic benefit
- Public review
- Protects waters of outstanding significance

# WQS Elements per the CWA

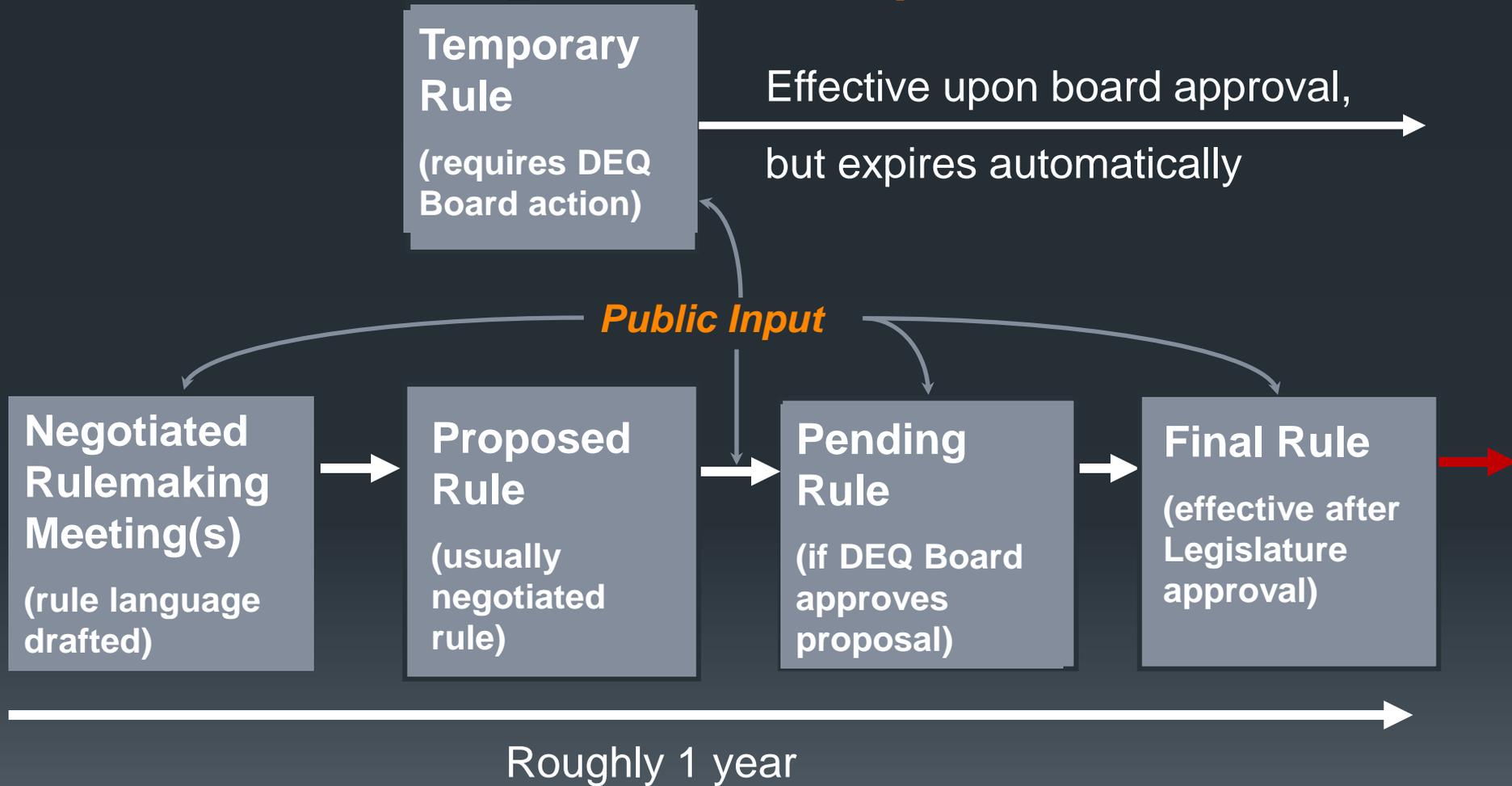


# Other Elements

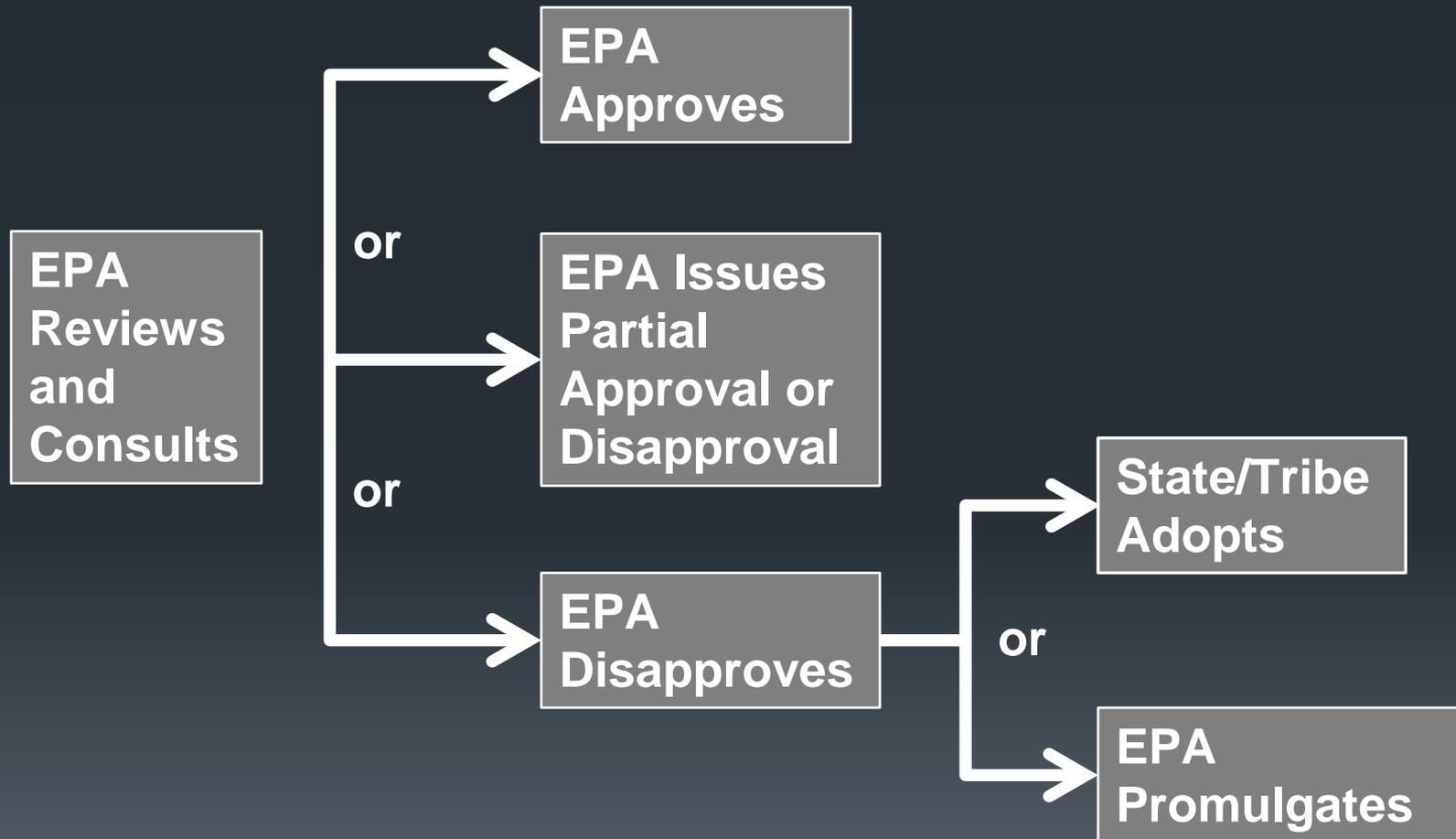
- **Low Flows** — for application of numeric criteria
- **Variances**
  - Short-term, pollutant & discharge specific
  - Provide an alternative to permanent downgrade of use or criteria
  - Subject to public review
- **Mixing zones**
  - Restricts areas where numeric criteria may be exceeded to known and controlled locations
  - Reduces need for excessive wastewater treatment

# Idaho's Rulemaking Process

# Rulemaking Oversimplified



# WQS Submission Review



# 2017 Triennial Review Process

# 2017 Triennial Review Process

- Is not Rulemaking:
  - Simply identifies issues, no changes to WQS will occur as part of the triennial review process

## 2017 Triennial Review Process

- Presenting issues for discussion, but not providing specific remedies or rule language

# 2017 Triennial Review Process

- Identify key issues to address
- Set priorities for next 3+ years

# 2017 Triennial Review Timeline

Date	
4/11/2017	Public Workshop - Boise
4/18/2017	Public Workshop - Pocatello
5/2/2017	Public Workshop - Coeur d'Alene
<b>6/30/2017</b>	<b>Public Comment Deadline - Workshops</b>
9/1/2017	Draft Report Published
10/1/2017	Public Comment Deadline - Draft Report
11/1/2017	Final Report Published

# Review of 2014 Triennial Review and progress

Topic	Rule Section	2014 Priority	Status
Update Idaho's toxics criteria for human health	210	High	Submitted to EPA 12/13/16, EPA Action Pending

Topic	Rule Section	2014 Priority	Status
Designation of uses and development of UAAs	100	High	Submitted to EPA 12/30/16, EPA Action Pending

Topic	Rule Section	2014 Priority	Status
Update aquatic life criteria for copper	210	High	Negotiated Rulemaking / Guidance Development in Progress

Topic	Rule Section	2014 Priority	Status
Salmonid Spawning use designation	250.02(f)	High	Carried over to 2017 Triennial Review

Topic	Rule Section	2014 Priority	Status
Adopt §304(a) recommendation for ammonia criteria	250.02(d)	High	Carried over to 2017 Triennial Review

Topic	Rule Section	2014 Priority	Status
Recreational Use and Criteria		Medium	Carried over to 2017 Triennial Review
Revise dissolved oxygen criteria	100, 251	Medium	Carried over to 2017 Triennial Review
Update aquatic life criteria for selenium; Adopt site-specific selenium aquatic life criterion for certain waters	210 27X	Medium	Negotiated rulemaking for 2018 adoption

Topic	Rule Section	2014 Priority	Status
Clarify water quality expectations for manmade waters once national WOTUS rule is finalized.	101	Medium	This item has been tabled pending review of the WOTUS definition

# Review of Issues Identified by DEQ

# Modified Aquatic Life Use for Undesignated Waters

- DEQ is considering designating certain jurisdictional man-made waterways for modified aquatic life use on a case-by-case basis and developing site-specific criteria to protect existing and incidental aquatic life uses

# Modified Aquatic Life Use for Undesignated Waters

- Nondesignated Surface Waters (IDAPA 58.01.02.101):

*a. Because the Department presumes most waters in the state will support cold water aquatic life and primary or secondary contact recreation beneficial uses, the Department will apply cold water aquatic life and primary or secondary contact recreation criteria to undesignated waters...*

# Modified Aquatic Life Use for Undesignated Waters

- Man-made waterways (IDAPA 58.01.02.101.02) :

*Unless designated in Sections 110 through 160, man-made waterways are to be protected for the use for which they were developed.*

# Modified Aquatic Life Use for Undesignated Waters

- Surface Water Quality Criteria for Modified Aquatic Life Use Designations (IDAPA 58.01.02.250.05):

*Water quality criteria for modified aquatic life will be determined on a case-by-case basis reflecting the chemical, physical, and biological levels necessary to attain the existing aquatic life community. These criteria, when determined, will be adopted into these rules..*

# Modified Aquatic Life Use for Undesignated Waters

# Salmonid Spawning Use Designation

- **Surface Water Use Designations (IDAPA 58.01.02.100)**

- 01. Aquatic Life.***

- b. Salmonid spawning (SS): waters which provide or could provide a habitat for active self-propagating populations of salmonid fishes.*

- **Surface Water Quality Criteria for Aquatic Life Use Designations (IDAPA 58.01.02.250)**

- 02. Cold Water***

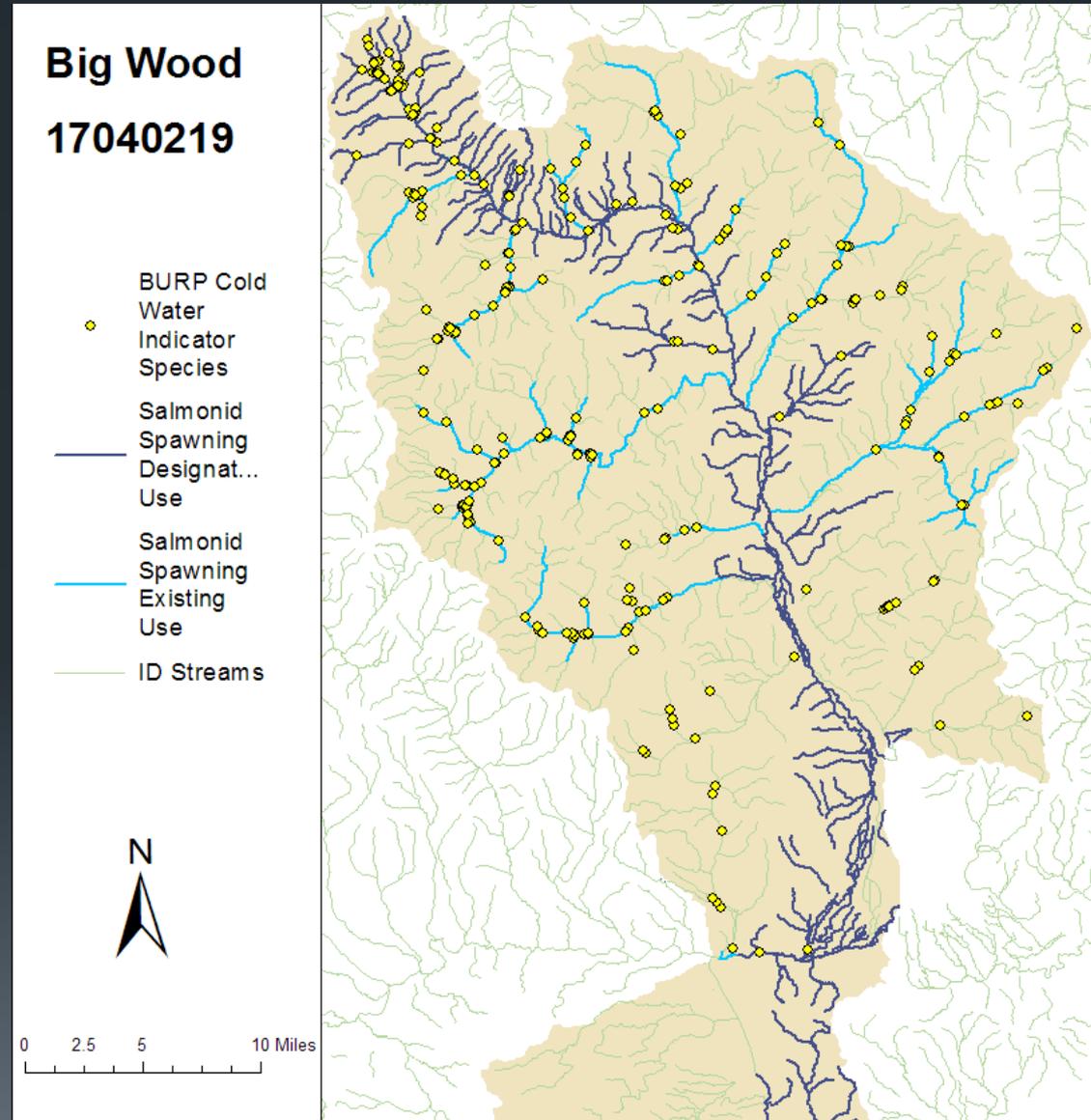
- f. Salmonid Spawning. The Department shall determine spawning periods on a waterbody specific basis taking into account knowledge of local fisheries biologists, published literature, records of the Idaho Department of Fish and Game, and other appropriate records of spawning and incubation, as further described in the current version of the “Water Body Assessment Guidance...”*

# Salmonid Spawning Use Designation

2017

47

- Review SS Use Designations
- Update SS temperature criteria
- Data driven





# Recreational Use and Criteria

- Recreational use:
  - Bacteria criteria (*E. coli*)
  - *Toxic substances criteria*
- Current Recreational Use Designations (IDAPA 58.01.02.100)
  - Primary Contact Recreation (PCR)
  - Secondary Contact Recreation (SCR)
  - Public Swimming Beach



# Recreational Use and Criteria

- Single Sample Maximum (SSM) for bacteria – thresholds for additional monitoring

	<i>E. coli</i> (CFU/100 mL)
SCR	576
PCR	406
Public Swimming Beach	235

# Recreational Use and Criteria

- Multiple use categories, single criterion
  - *E. coli* criterion:

Geometric Mean of 126 CFU/100mL

# Recreational Use and Criteria

Indicator	Current Idaho Criteria (cfu/100 mL)			EPA 2012 Recommended Criteria (cfu/100 mL)			
				Illness Rate of 36/1,000 Users		Illness Rate of 32/1,000 Users	
	Geometric Mean	SSM <sup>a</sup>		Geometric Mean	STV <sup>a,b</sup>	Geometric Mean	STV <sup>a,b</sup>
<i>E. coli</i>	126	Secondary Contact	576	126	410	100	320
		Primary Contact	406				
		Public Swimming Beach	235				
Enterococci	—	—		35	130	30	110

<sup>a</sup> The single sample maximum values (SSM) and the statistical threshold values (STV) are *not* criteria, and exceedance of an SSM or STV alone is not considered a criterion violation. Rather, these are considered “trigger values” that initiate additional sampling.

<sup>b</sup> Greater than 10% frequency of exceedance of the STV in a 30-day period would be a violation even if the geometric mean criterion wasn't violated over the same period.

# Recreational Use and Criteria

- Collapse PCR and SCR into single Recreation use
- Consider EPA's 2012 recommendation

# Comparison of Idaho Aquatic Life Criteria to EPA recommended criteria

- Acrolein
- Carbaryl
- Diazinon
- Ammonia
- Cadmium
- Selenium

# Acrolein

## EPA §304(a) recommended criteria and Idaho WQS comparison

Criteria Version	CMC ( $\mu\text{g/L}$ ) <sup>a</sup>	CCC ( $\mu\text{g/L}$ ) <sup>a</sup>
Idaho WQS	—	—
EPA §304(a)	3	3

a. Acute Criteria (CMC) and Chronic Criteria (CCC) (IDAPA 58.01.02.010).

# Carbaryl

## EPA §304(a) recommended criteria and Idaho WQS comparison

Criteria Version	CMC ( $\mu\text{g/L}$ ) <sup>a</sup>	CCC ( $\mu\text{g/L}$ ) <sup>a</sup>
Idaho WQS	—	—
EPA §304(a)	2.1	2.1

a. Acute Criteria (CMC) and Chronic Criteria (CCC) (IDAPA 58.01.02.010).

# Diazinon

## EPA §304(a) recommended criteria and Idaho WQS comparison

Criteria Version	CMC ( $\mu\text{g/L}$ ) <sup>a</sup>	CCC ( $\mu\text{g/L}$ ) <sup>a</sup>
Idaho WQS	—	—
EPA §304(a)	0.17	0.17

a. Acute Criteria (CMC) and Chronic Criteria (CCC) (IDAPA 58.01.02.010).

# Ammonia

- Similarities between EPA §304(a) recommended criteria and Idaho WQS
  - Equation based on pH, Temperature, and Life Stage of Aquatic Species
  - Described as milligrams of Total Ammonia Nitrogen per Liter (mg TAN/L)

*In this example, criteria magnitudes for ammonia are expressed at pH 7 and 20 °C.*

# Ammonia

## EPA §304(a) recommended criteria and Idaho WQS comparison

Criteria Version	Criterion Duration	
	CMC <sup>a</sup>	CCC <sup>a</sup> — When Fish Early Life Stages Present
Idaho WQS	24	4.15 <sup>c</sup>
EPA §304(a)	17	1.9 <sup>c</sup>
	(1-hr ave, mg TAN/L)	(30-day ave <sup>b</sup> , mg TAN/L)

a. Acute Criteria (CMC) and Chronic Criteria (CCC) (IDAPA 58.01.02.010).

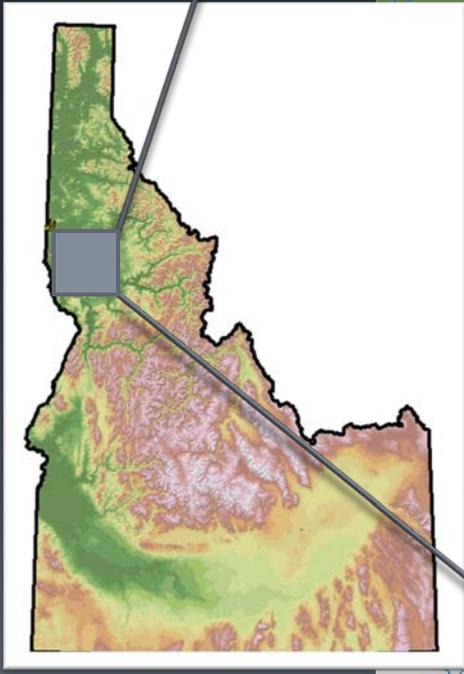
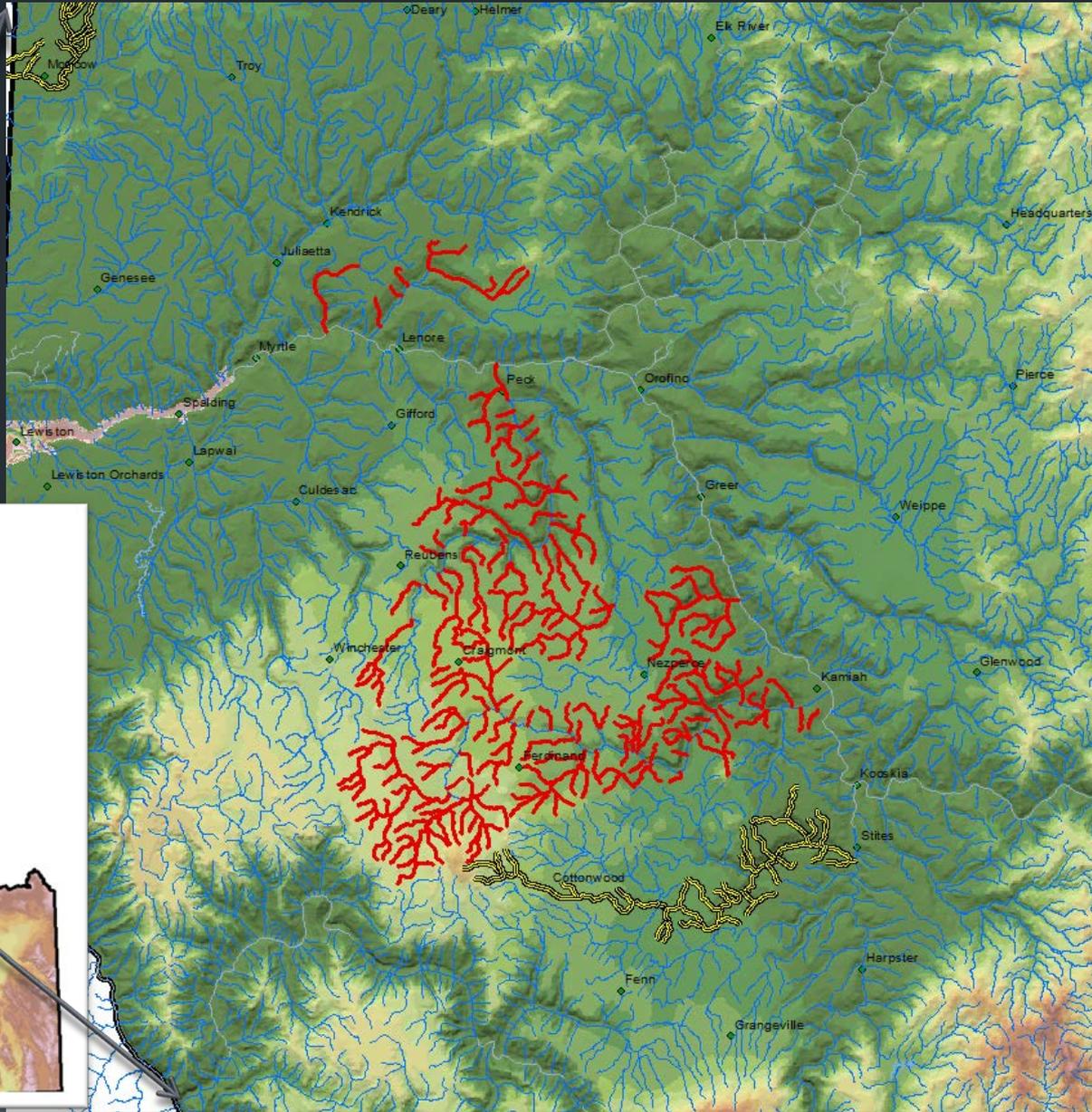
b. Rolling average for 2013 EPA criteria.

c. Not to exceed 2.5 times the criterion continuous concentration as a 4-day average within a 30-day period.

Criteria frequency: Not to be exceeded more than once in 3 years on average.

*In this example, criteria magnitudes for ammonia are expressed at pH 7 and 20 °C.*

# Ammonia



# Cadmium

## EPA §304(a) recommended criteria and Idaho WQS comparison

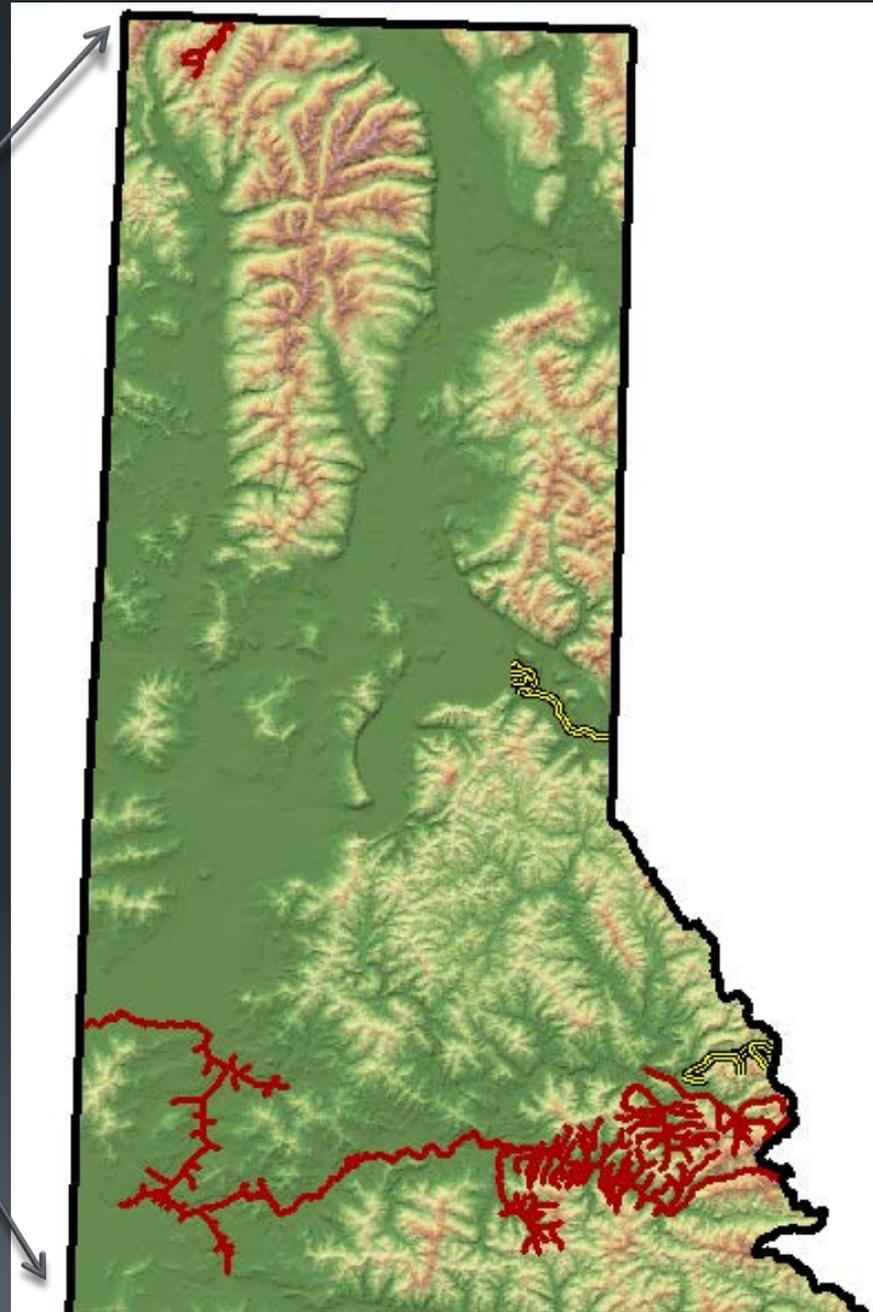
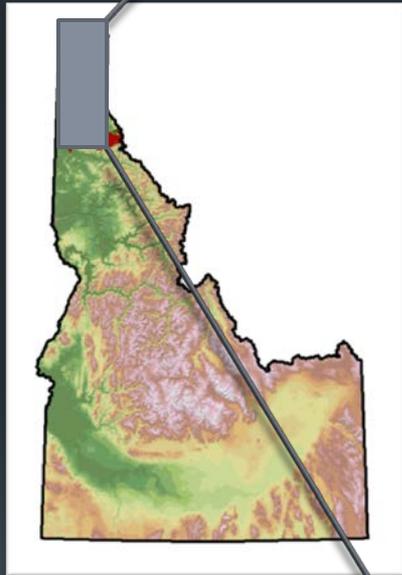
Criteria Version	CMC ( $\mu\text{g/L}$ )	CCC ( $\mu\text{g/L}$ ) <sup>a</sup>
Idaho WQS	1.3 <sup>b</sup>	0.6 <sup>b</sup>
EPA §304(a)	1.8 <sup>c</sup>	0.72 <sup>c</sup>

a. Acute Criteria (CMC) and Chronic Criteria (CCC) (IDAPA 58.01.02.010).

b. For comparative purposes only, the example values displayed in this table are shown as dissolved metal and correspond to a total hardness of 100 mg/L and a water effect ratio of one (1.0).

c. Freshwater acute and chronic criteria are hardness-dependent and were normalized to a hardness of 100 mg/L as  $\text{CaCO}_3$  to present representative criteria values.

# Cadmium



# Selenium

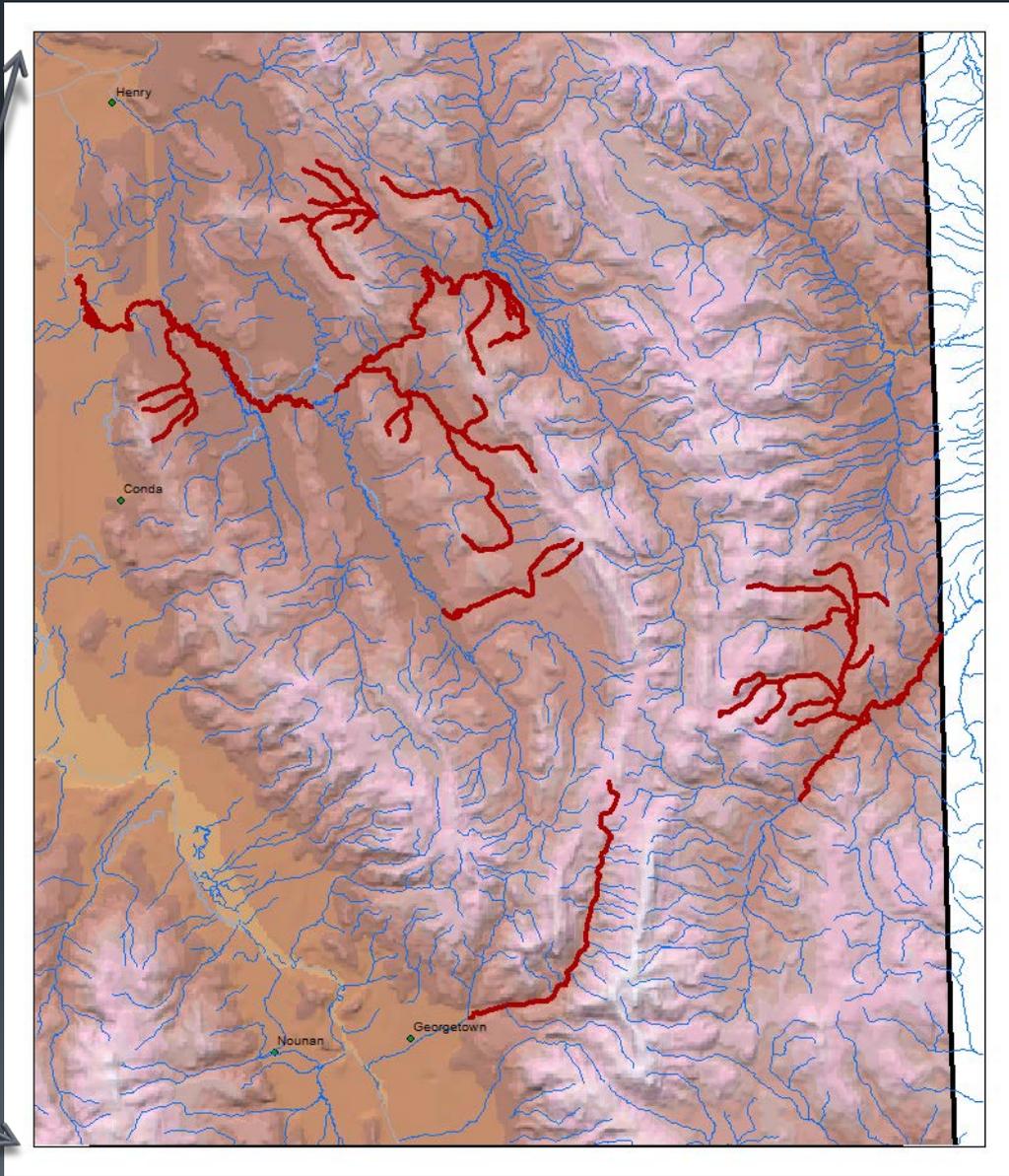
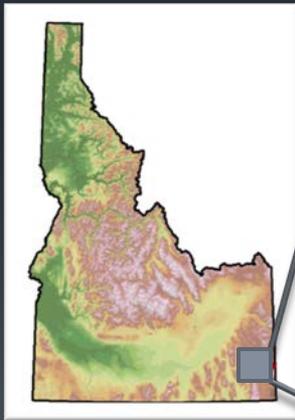
Criterion Version	Chronic					Short-term
	Egg-Ovary (mg/kg dw)	Fish Tissue (mg/kg dw)		Water Column (µg/L)		Water Column (µg/L)
	Egg-Ovary	Whole Body	Muscle	Water Lentic	Water Lotic	Water
<b>Idaho WQS</b>	N/A	N/A	N/A	5 (4 day)	5 (4 day)	20 (Instantaneous)
<b>EPA §304(a)</b>	15.1	8.5	11.3	1.5 (30 day)	3.1 (30 day)	Intermittent exposure equation

Note: Intermittent Exposure Water Quality Criteria:

$$\frac{WQC_{30\text{-day}} - C_{\text{bkgrnd}} (1 - f_{\text{int}})}{f_{\text{int}}}$$

where  $WQC_{30\text{-day}}$  is the water column monthly element;  $C_{\text{bkgrnd}}$  is the average background selenium concentration, and  $f_{\text{int}}$  is the fraction of any 30-day period during which elevated selenium concentrations occur, with  $f_{\text{int}}$  assigned a value  $\geq 0.033$  (corresponding to 1 day).

# Selenium



# Cold Water Aquatic Life Criteria for Turbidity

- **Turbidity Criteria for Aquatic Life Use Designations (IDAPA 58.01.02.250)**

*02. **Cold Water.** Waters designated for cold water aquatic life are not to vary from the following characteristics due to human activities:*

*e. Turbidity, below any applicable mixing zone set by the Department, shall not exceed background turbidity by more than fifty (50) NTU instantaneously or more than twenty-five (25) NTU for more than ten (10) consecutive days.*

# Cold Water Aquatic Life Criteria for Turbidity

- Temporary
- Short term
- Small projects designed to improve water quality or habitat





## “Alaska Rule”

- WQS adopted and submitted to EPA after May 30, 2000, become “applicable for Clean Water Act purposes” only when EPA approves them, a condition known as the “Alaska Rule.” (40 CFR 131.21)



## “Alaska Rule”

- DEQ is considering rulemaking to clarify how 40 CFR 131.21 affects Idaho WQS and to identify standards for which EPA action is still pending

# “Alaska Rule”

- <http://www.deq.idaho.gov/water-quality/surface-water/standards/epa-actions-on-proposed-standards/>

# Other Issues

- Domestic Water Supply:
  - Designate waters where Domestic Water Supply is an existing use (active surface water intakes)
- Cold Water Aquatic Life Use Designation:
  - Designate waters where CWAL is an existing use
- Dissolved Oxygen

# Questions?

# Comments:

- Comments due: 6/30/2017
- Submit all written comments by mail, fax or email to:

Paula Wilson

Idaho Department of Environmental Quality

1410 N. Hilton, Boise, ID 83706

Fax: (208) 373-0481, [paula.wilson@deq.idaho.gov](mailto:paula.wilson@deq.idaho.gov)