

Selenium in Idaho

Subtitle



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

Mary Anne Nelson, PhD
Surface & Wastewater Division Administrator

History

2012 – Simplot submits
SSC request and
document

2000s

Site specific criteria
workgroup (Wyoming
DEQ, Idaho DEQ, USFS,
EPA, Idaho Fish & Game)
Statewide fish tissue
monitoring effort includes
selenium

2010s

2014 – EPA proposes
tissue criteria for
selenium
2014 & 2015 – BiOps
2016 – 304(a) criteria
final
2017 – DEQ adopts
selenium criteria

2020s

Idaho Criteria

Chronic					Short-term
Egg-Ovary (mg/kg dw)	Fish Tissue (mg/kg dw)		Water Column (ug/L)		Water Column (ug/L)
Egg-Ovary	Whole Body	Muscle	Lentic	Lotic	Water
15.1 ¹	8.5 ²	11.3 ²	1.5 (30 day Ave) ³	3.1 (30 day Ave) ³	Equation ^{3, 4}

Idaho Criteria – Montana Criteria

Chronic					Short-term
Egg-Ovary (mg/kg dw)	Fish Tissue (mg/kg dw)		Water Column (ug/L)		Water Column (ug/L)
Egg-Ovary	Whole Body	Muscle	Lentic (lake or reservoir)	Lotic	Water
15.1	8.5	11.3	1.5 0.8	3.1	Equation ^{3, 4}

Idaho Criteria

1. Egg-ovary supersedes any whole-body, muscle, or water column element when fish egg-ovary concentrations are measured. Single measurement of an average or composite sample of at least five (5) individuals of the same species. Not to be exceeded; DEQ will evaluate all representative egg-ovary data to determine compliance with this criterion element.

Idaho Criteria

2. Fish whole-body or muscle tissue supersedes water column element when both fish tissue and water concentrations are measured. Single measurement of an average or composite sample of at least five (5) individuals of the same species where the smallest individual is no less than seventy-five percent (75%) of the total length (size) of the largest individual. Not to be exceeded; DEQ will evaluate all representative whole body or muscle data to determine compliance with this criterion element.

Idaho Criteria

3. Water column values are based on dissolved total selenium in water and are derived from fish tissue values via bioaccumulation modeling. Water column values are the applicable criterion element in the absence of steady-state condition fish tissue data. In fishless waters, selenium concentrations in fish from the nearest downstream waters may be used to assess compliance using methods provided in Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater, EPA-822-R-16-006, Appendix K: Translation of a selenium Fish Tissue Criterion Element to a Site-Specific Water Column Value (June 2016).

Currently

2012 – Simplot submits SSC request and document

2020 – Integrated Report listing Kootenai River in ID as impaired due to selenium

2000s

2010s

2020s

Site specific criteria workgroup (Wyoming DEQ, Idaho DEQ, USFS, EPA, Idaho Fish & Game)
Statewide fish tissue monitoring effort includes selenium

2014 – EPA proposes tissue criteria for selenium

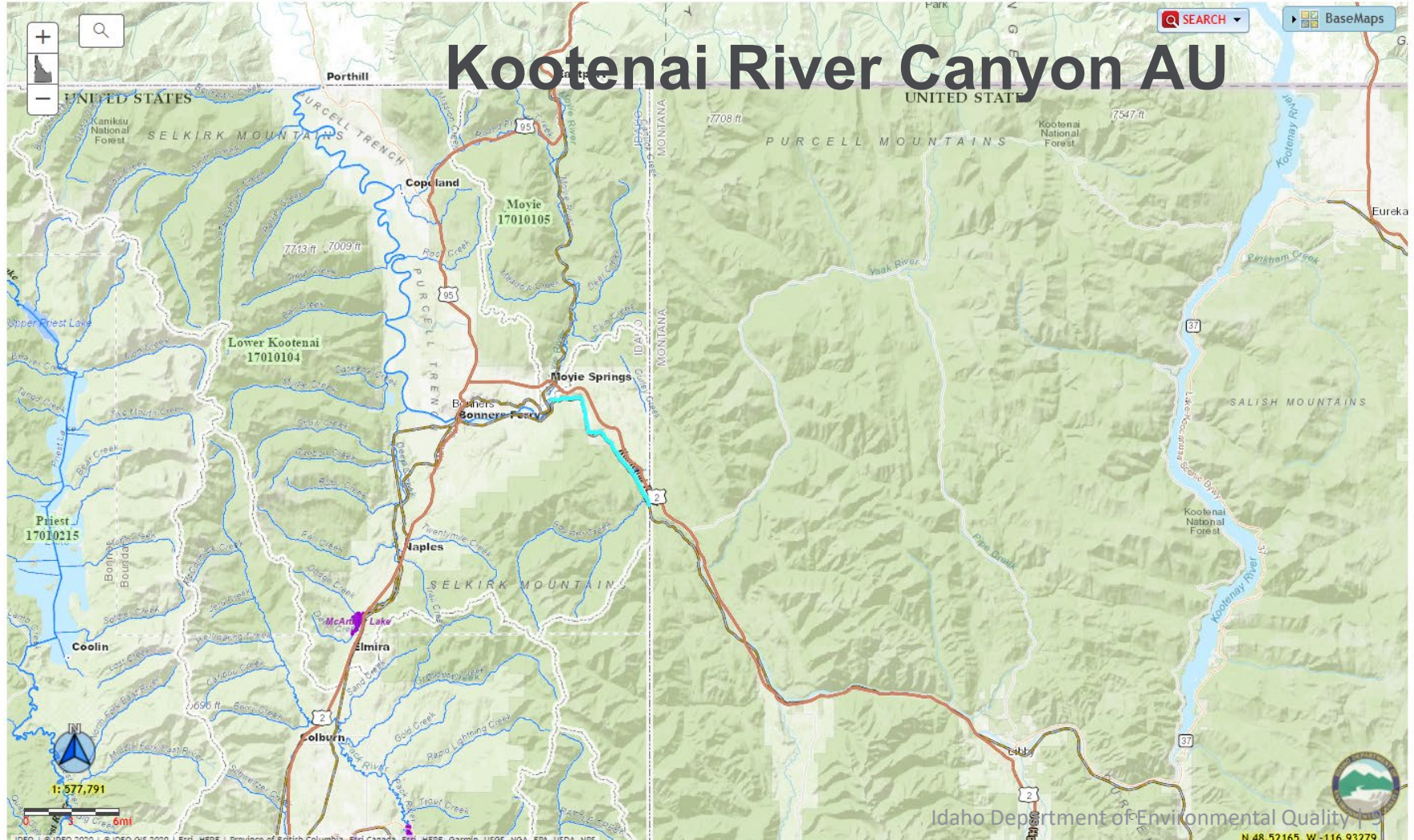
2014 & 2015 – BiOps

2016 – 304(a) criteria final

2017 – DEQ adopts selenium criteria

2021 – Monitoring to evaluate extent of impairment

Kootenai River Canyon AU



Kootenai River whitefish

Metric	Value								
Individual mountain whitefish	#1	#2	#3	#4	#5	#6	#7	#8	#9
Length (mm)	305	281	315	290	267	295	300	296	295
Selenium concentration in egg-ovary (mg/kg dry weight)	17	29.3	17.2	18.7	16.9	26.3	18.1	21	19.4
Average selenium concentration in egg-ovary (mg/kg dry weight)	20.4								

2022

- Targeting major tributary confluences in the Idaho portion of the Kootenai to determine selenium inputs within Idaho.
- Will record USGS discharge measurements where available, temperature, pH, specific conductivity and turbidity



Questions?



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Your name
Your title