

# Calcite and Westslope Cutthroat Trout Spawning Suitability

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## Species Information

**Common Name:** Westslope Cutthroat Trout  
**Genus:** *Oncorhynchus clarkii lewisi*

## Stressor Details

**Stressor Name:** Calcite  
**Units:** Calcite concretion  
**Scale:** linear  
**Function Type:** continuous  
**Vital Rate/Process:** Capacity

## Life Stage & Context

**Life Stages:** Spawners  
**Geography:** Elk River, BC  
**Activity:** Spawning  
**Season:** Spawning Season

## Descriptions

### Overview

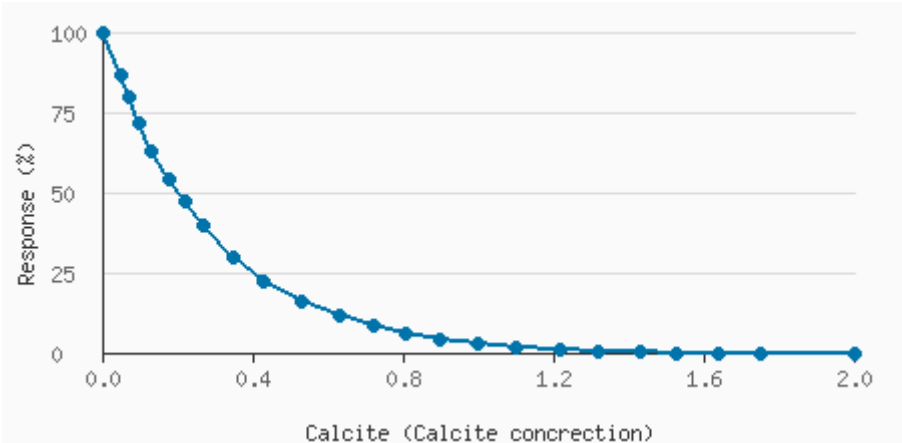
Draft WCT spawning suitability response curves for calcite concretion based on data collected in 2018 and 2019 from 17 tributary streams of the Elk River, B.C. Curves are model-averaged predictions of the effects of calcite concretion on redd presence and redd counts.

The influence of calcite concretion on the response variables was negative, and the suitability model for WCT decreases exponentially with increasing levels of calcite concretion.

### Function Derivation

expert opinion

## Stressor Response Data



Stressor (X)	Mean System Capacity (%)	SD	low.limit	up.limit
0.00	100.00	0.00	100.00	100.00

0.05	86.52	0.00	86.52	86.52
0.07	80.00	0.00	80.00	80.00
0.10	71.30	0.00	71.30	71.30
0.13	63.04	0.00	63.04	63.04
0.18	54.35	0.00	54.35	54.35
0.22	46.96	0.00	46.96	46.96
0.27	39.57	0.00	39.57	39.57
0.35	30.00	0.00	30.00	30.00
0.43	22.17	0.00	22.17	22.17
0.53	15.65	0.00	15.65	15.65
0.63	11.30	0.00	11.30	11.30
0.72	8.26	0.00	8.26	8.26
0.81	5.65	0.00	5.65	5.65
0.90	4.35	0.00	4.35	4.35
1.00	2.61	0.00	2.61	2.61
1.10	1.74	0.00	1.74	1.74
1.22	0.87	0.00	0.87	0.87
1.32	0.43	0.00	0.43	0.43
1.43	0.43	0.00	0.43	0.43
1.53	0.00	0.00	0.00	0.00
1.64	0.00	0.00	0.00	0.00
1.75	0.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	0.00

## Citations

Hocking, M., Tamminga, A., Arnett, T., Robinson, M., Larratt, H., & Hatfield, T. (2021). Subject Matter Expert Report: Calcite. Evaluation of Cause–Decline in Upper Fording River Westslope Cutthroat Trout Population. Report prepared for Teck Coal Ltd. by Ecofish Research Ltd., Lotic Environmental Ltd., and Larratt Aquatic Consulting Ltd.

## References

Hocking et al. - <https://www.teck.com/media/Calcite-SME-Stressor-Report-UFR-Evaluation-of-Cause.pdf>