

Jensen et al 2009: Fine Sediment and Incubation Survival

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Species Information

Common Name: Pacific salmon (generalized)

Stressor Details

Stressor Name: Sedimentation

Units: % fines (0.85mm)

Metric: Fine Sediment

Scale: linear

Function Type: continuous

Vital Rate/Process: Survivorship

Life Stage & Context

Life Stages: Egg

Geography: Pacific Northwest

Activity: Incubation

Descriptions

Overview

Reach-averaged percentage of fine sediment (

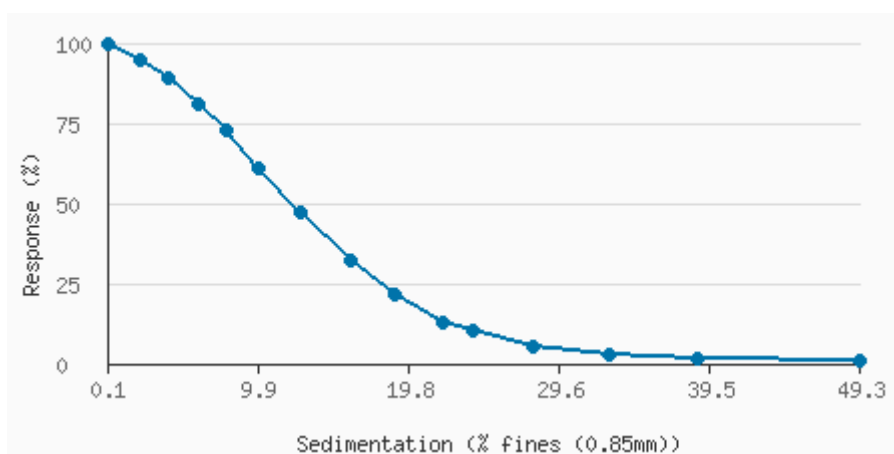
Stressor Magnitude Data

Empirical model that estimates fine sediment from road density, slope and bankfull width

Pathways of Effect

Upland development, road building, fine sediment, smothering of eggs, egg to fry survivorship

Stressor Response Data



Stressor (X)	Mean System Capacity (%)	SD	low.limit	up.limit
0.1	100	20	45	100
2.33	94.6	25	45	100

4.07	88.85	25	30	100
6.1	80.93	30	30	100
7.85	72.66	30	30	100
9.98	61.15	25	15	100
12.79	47.12	25	15	100
15.99	32.01	20	2.5	85
18.99	21.58	20	0	85
22.09	12.95	10	0	35
24.03	10.43	7.5	0	35
28	5.4	5	0	10
33.04	2.88	2.5	0	10
38.76	1.8	1	0	10
49.32	1.08	0	0	10

Citations

Beechie, T. J., C. Nicol, C. Fogel, J. Jorgensen, J. Thompson, G. Seixas, J. Chamberlin, J. Hall, B. Timpane-Padgham, P. Kiffney, S. Kubo, and J. Keaton. 2021. Modeling Effects of Habitat Change and Restoration Alternatives on Salmon in the Chehalis River Basin Using a Salmonid Life-Cycle Model. U.S. Department of Commerce, NOAA Contract Report NMFS-NWFSC-CR-2021-01.

Jensen, D. W., E. A. Steel, A. H. Fullerton, and G. R. Pess. 2009. Impact of fine sediment on incubation survival of Pacific salmon: a meta-analysis of published studies. *Reviews in Fisheries Science* 17(3):348-359.

References

Beechie et al 2021 - <https://repository.library.noaa.gov/view/noaa/29486>