

Mull & Wilzback 2007: Coho Spawning Site Selection with Substrate

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Species Information

Common Name: Coho Salmon

Genus: *Oncorhynchus kisutch*

Stressor Details

Stressor Name: Substrate and Channel Unit

Units: %

Metric: Percent gravel-pebble

Scale: linear

Function Type: continuous

Vital Rate/Process: Site Selection Probability

Life Stage & Context

Life Stages: Spawners

Geography: Northern California, Freshwater Creek

Activity: Spawning

Season: Spawning

Descriptions

Overview

Site selection probability for Coho Salmon spawning (spawning habitat suitability) based on percent gravel-pebble substrate coverage.

Model:

Spawning Site Selection Probability = [Percent gravel-pebble] * [pool-riffle vs run-riffle] habitat * [Redds nearby]

Data file from pool-riffle; PROX=1 (redds already nearby)

Function Derivation

Regression model from field data.

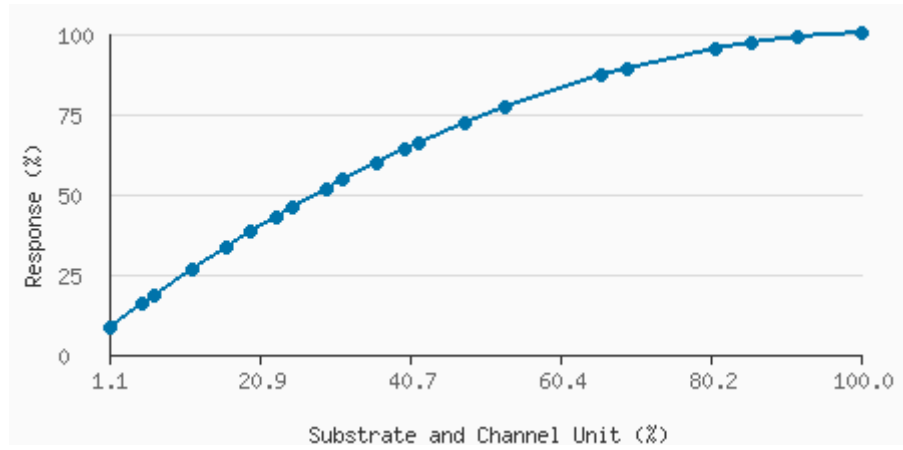
Transferability of Function

Direction and magnitude likely transferable

Source of Stressor Data

Field data

Stressor Response Data



Stressor (X)	Mean System Capacity (%)	SD	low.limit	up.limit
1.1	8.4	0	14.93	14.93
5.5	16	0	16.42	16.42
7.1	18.7	0	19.4	19.4
12.1	26.7	0	24.63	24.63
16.5	33.4	0	29.85	29.85
19.8	38.2	0	35.82	35.82
23.1	42.9	0	39.55	39.55
25.3	45.9	0	44.78	44.78
29.7	51.7	0	49.25	49.25
31.9	54.4	0	54.48	54.48
36.3	59.7	0	58.21	58.21
40.1	64.1	0	64.18	64.18
41.8	65.9	0	68.66	68.66
47.8	72.1	0	74.63	74.63
53.3	77.2	0	79.1	79.1
65.9	87	0	88.81	88.81
69.2	89.1	0	90.3	90.3
80.8	95.2	0	95.52	95.52
85.7	97.1	0	96.27	96.27
91.8	98.9	0	97.76	97.76
100	100.3	0	98.51	98.51

Citations

Mull, K. E., & Wilzbach, M. A. (2007). Selection of spawning sites by coho salmon in a northern California stream. *North American Journal of Fisheries Management*, 27(4), 1343-1354.

References

Mull and Wilzbach 2007 - <https://www.humboldt.edu/sites/default/files/cuca/2024-08/mullwilzbach2007.pdf>