

Beecher 2004: HSI Coho and Juvenile Velocity

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Species Information

Common Name: Coho Salmon
Genus: Oncorhynchus kisutch

Stressor Details

Stressor Name: Velocity
Units: m/s
Metric: Water Velocity
Scale: linear
Function Type: continuous
Vital Rate/Process: Habitat Suitability Index

Life Stage & Context

Life Stages: Fry
Geography: Pacific Northwest
Activity: rearing
Season: Summer (low flow)

Descriptions

Overview

These empirical, frequency-of-use values are derived from standard Washington Department of Fish and Wildlife Instream Flow Study Guidelines and regional Pacific Northwest monitoring. They assume a strict behavioral preference for slow pool margins.

Stressor-response relationship data sourced from: FIGURE 5b. Coho Salmon Juvenile Velocity Preference Recommended velocity preference curve (p.g., 45).

Function Derivation

Empirical frequency-of-use (use/availability) data, smoothed into a recommended curve.

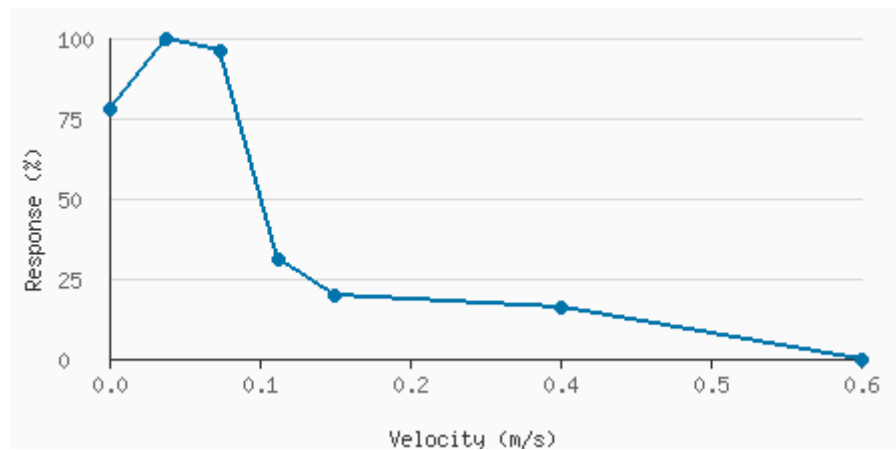
Transferability of Function

Western Washington streams; frequency-based curves may not reflect habitat quality at high fish densities.

Source of Stressor Data

Snorkel observations of juvenile coho microhabitat use (4 studies, 451 fish) relative to measured habitat availability..
Instream flow study criteria.

Stressor Response Data



Raw Stressor Values	Scaled Response Values 0 to 100	SD	low.limit	up.limit
0	78	0	0	100
0.046	100	0	0	100
0.091	96	0	0	100
0.137	31	0	0	100
0.183	20	0	0	100
0.366	16	0	0	100
0.61	0	0	0	100

Citations

Beecher, H. A., Carleton, B. A., & Fricke, T. F. (2002). Evaluation of depth and velocity preferences of juvenile coho salmon in Washington streams. Northwest Science, 76(4), 314–325.

References

Beecher et al., 2002 - <https://wdfw.wa.gov/sites/default/files/publications/00574/wdfw00574.pdf>