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.

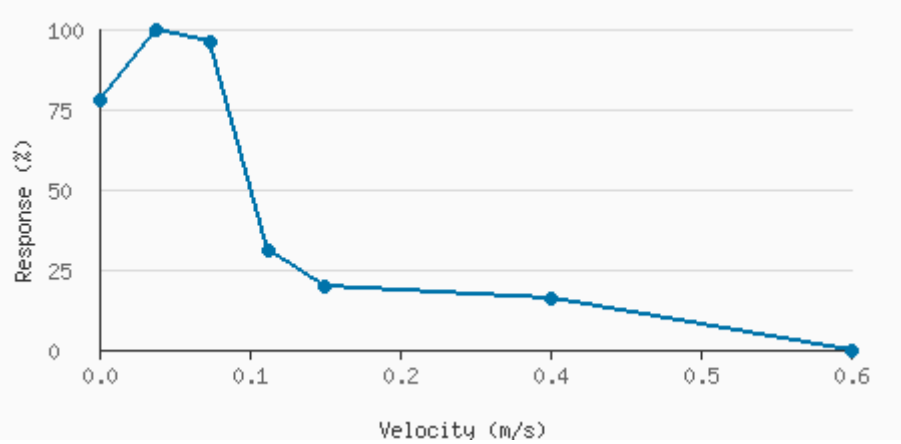
Transferability of Function

> 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