

WDFW & Ecology 2004: HSI Coho Spawning 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 (mean column velocity at redd)
Scale: linear
Function Type: continuous
Vital Rate/Process: Habitat Suitability Index

Life Stage & Context

Life Stages: Spawners
Geography: Quinault River tributary, Washington
Activity: spawning
Season: Fall-early winter (spawning season)

Descriptions

Overview

Recommended spawning velocity preference curve for Coho Salmon used in Washington PHABSIM/IFIM instream flow studies. Suitability is 0.40 in still to slow water (≥ 0.08 m/s), peaks at ~ 0.32 m/s, and declines to 0 at ~ 1.19 m/s. Plotted velocities converted from ft/s to m/s; the 99 ft/s terminal value (0) is omitted.

Stressor-response relationship data sourced from: FIGURE 4b. Coho Salmon Spawning Velocity Preference — Recommended velocity preference curve (p. 44).

Function Derivation

Recommended (smoothed, expert-adjusted) curve derived from observed redd velocity use relative to availability.

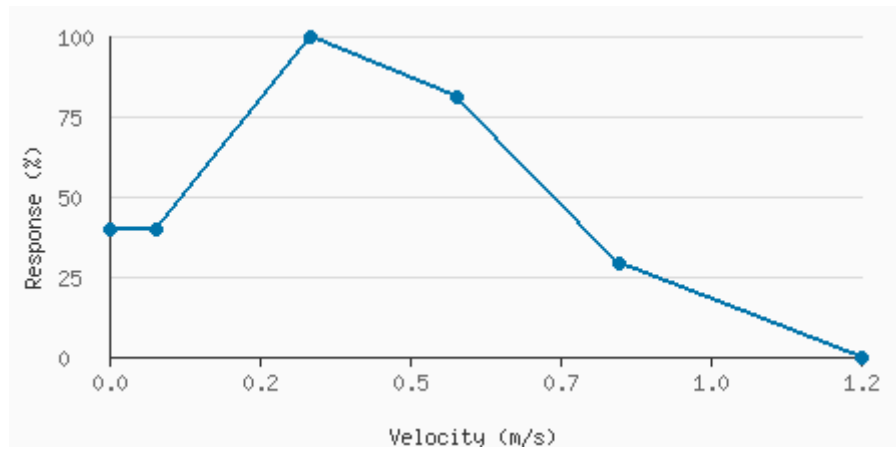
Transferability of Function

Developed for western Washington coastal streams; consult WDFW/Ecology before local application.

Source of Stressor Data

Redd microhabitat measurements (2 studies, 30 redds) compared with available habitat, following WDFW–Ecology instream flow study guidelines.

Stressor Response Data



Raw Stressor Values	Scaled Response Values 0 to 100	SD	low.limit	up.limit
0	40	0	0	100
0.076	40	0	0	100
0.32	100	0	0	100
0.549	81	0	0	100
0.808	29	0	0	100
1.189	0	0	0	100

Citations

Washington Department of Fish and Wildlife & Washington Department of Ecology. (2008). Instream flow study guidelines: Technical and habitat suitability issues including fish preference curves (Publication No. 04-11-007; updated April 5, 2004; error correction update February 12, 2008). Washington Department of Fish and Wildlife.

References

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