WDFW & Ecology 2008: HSI Coho Spawning Depth

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Species Information

Common Name: Coho Salmon
Genus: Oncorhynchus kisutch

Stressor Details

Stressor Name: Depth
Units: m
Metric: Water Depth (total depth 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 depth preference curve for Coho Salmon used in Washington PHABSIM/IFIM instream flow studies. Suitability is 0 below ~0.14 m, rises to optimum at ~0.62 m, and declines to near zero (0.01) by ~1.0–1.2 m. Plotted depths converted from feet to metres; the source's 99 ft terminal value (0.01) is omitted, so the last value (0.01 at 1.22 m) should be held for deeper water.
>
> Stressor-response relationship data sourced from: FIGURE 4a. Coho Salmon (O. kisutch) Spawning Depth Preference, Dewatto River and Fletcher Canyon Creek (Quinault tributary) (2 studies, 30 redds) - Recommended depth preference curve (p. 44).

Function Derivation

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

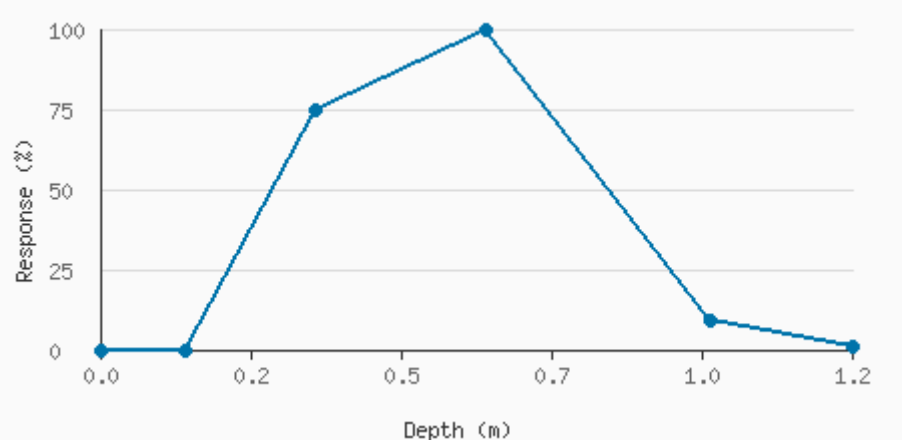
Transferability of Function

> 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	0	0	0	100
0.137	0	0	0	100
0.351	75	0	0	100
0.625	100	0	0	100
0.991	9	0	0	100
1.219	1	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