Dissolved Oxygen and Steelhead Trout Embryo

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Species Information

Common Name: Steelhead Trout
Genus: Oncorhynchus mykiss

Stressor Details

Stressor Name: Dissolved Oxygen
Units: mg/L
Metric: Dissolved Oxygen Concentration
Scale: linear
Function Type: continuous
Vital Rate/Process: Growth

Life Stage & Context

Life Stages: Egg
Geography: Lincoln County, Oregon
Season: Emergence

Descriptions

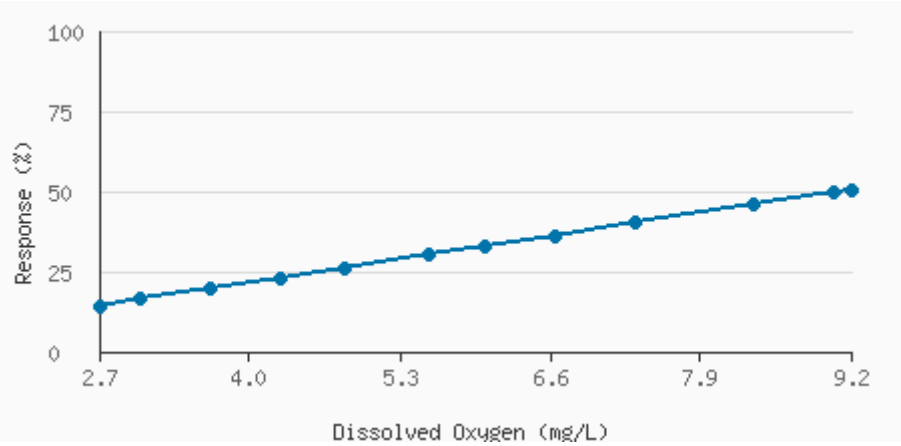
Overview

> Relation between dissolved oxygen concentration and survival of steelhead embryos in natural redds.

Function Derivation

> field study

Stressor Response Data



Stressor (X)	Mean System Capacity (%)	SD	low.limit	up.limit
2.65	14.08	7.8	0	100
3	16.36	5.52	0	100
3.62	19.78	12.36	0	100
4.22	23.02	9.13	0	100
4.79	26.06	13.32	0	100

5.51	30.05	9.32	0	100
6	32.91	13.89	0	100
6.61	36.14	10.65	0	100
7.31	40.14	14.84	0	100
8.34	45.84	13.51	0	100
9.04	49.65	11.98	0	100
9.18	50.41	11.03	0	100

Citations

Bjornn, T. C., & Reiser, D. W. (1991). Habitat requirements of salmonids in streams. American Fisheries Society Special Publication, 19(837), 105. Coble, D. W. (1961). Influence of water exchange and dissolved oxygen in redds on survival of steelhead trout embryos. Transactions of the American Fisheries Society, 90(4), 469-474.

References

https://www.for.gov.bc.ca/hfd/LIBRARY/FFIP/Bjornn_TC1991.pdf -
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