

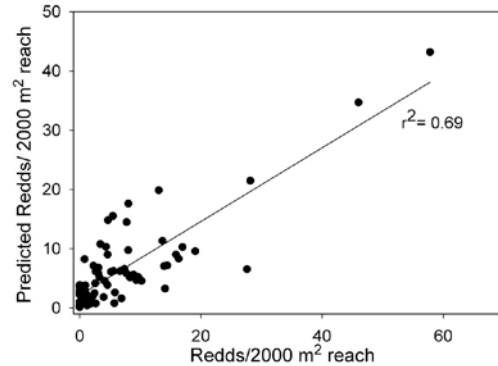
Effects of a changing physical template on the longitudinal distribution of brown trout in a mountain stream: implications for brown trout invasion success.

Dates:

2008-2012

Abstract:

In this research, we investigated potential factors influencing the Logan River brown trout distribution, including scouring of brown trout fry during the spring flood, gravel availability, temperature, and the availability of sculpin prey. Our results show that brown trout fry at high elevations are not more susceptible to scour during the spring flood, compared to fry at lower elevations. However, brown trout fry at high elevations may be more susceptible to displacement because a greater percentage of fry are still in the gravel during the flood. In a model of potential factors influencing brown trout spawning densities, the most informative predictive variables were the presence of anchor ice as a barrier to movement upstream, average temperature, and gravel availability. At low elevations, sculpin were present in high densities and comprised a large proportion of the brown trout diet. Our results illustrate that a combination of factors may contribute to low abundance of brown trout at high elevations, possibly related to lower temperatures and the availability of habitat for spawning. In addition, brown trout growth and condition at low elevations may be positively influenced by the high availability of sculpin prey.



Funding and Collaborators:

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Investigators:

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Selected Publications:

Wood, J. and P. Budy. 2009. An investigation of the early life-history and potential influences on invasion success of exotic of brown trout (*Salmo trutta*). Transactions of the American Fisheries Society 138:756-767.