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Influence of Beaver Activity on Summer Growth and Condition of Age-2 Atlantic Salmon Parr

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Abstract

The activity of beavers *Castor canadensis* in freshwater environments can have considerable localized impacts on the physical and biological components of riparian ecosystems. By changing the habitat of a stream, beaver dams can cause spatial variation in growth opportunity that may have direct consequences for the growth of resident fish. In a small stream in eastern Canada, we studied the effects of an ephemeral beaver pond on the growth and maturity of age-2 Atlantic salmon *Salmo salar* parr tagged with passive integrated transponder tags. Water temperature remained relatively uniform throughout the study site. We found very little movement of recaptured fish in the study site. Fish that were recaptured in the beaver pond displayed faster summer growth rates in both length and mass than fish that were recaptured immediately above or below the pond. We also found that parr in the pond maintained relatively high condition factors, whereas fish above and below the pond appeared to decrease in condition factor throughout the summer. In addition to growth, the maturation rates of age-2 males were higher above the dam than below. This study demonstrates the effect a beaver dam can have on individual growth rates. By influencing growth during sensitive periods, the beaver pond may also influence individual life history pathways. This information could be an important component in ecosystem models that predict the effect of beaver population dynamics on the growth of individual salmonids at the landscape scale.

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