

EFFECTS OF RIPARIAN VEGETATION REMOVAL ON AN ALASKAN SUBARCTIC STREAM

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ABSTRACT

The effects of riparian vegetation removal on a headwater stream in subarctic Alaska were examined using upstream-downstream and before and after comparisons. The study stream, Little Poker Creek, is located in permafrost-dominated taiga forest at the Caribou-Poker Creeks Research Watershed. Three adjacent study sections were established: an upstream "control," a section ("cut") destined for vegetation removal, and a downstream "recovery" section. Studies in 1982-4 examined pre-removal differences in the three study sections. Riparian vegetation was removed in the 160 m "cut" section in early spring of 1985, with differences among the three study sections examined in 1985 and 1986. Leaf litter input to the "cut" section averaged 0.58 g AFDW/m² compared to 37.22 g in the uncut (control and recovery) sections. Temperatures in the "cut" section showed a slight increase compared to the upstream control section. There were significant differences in densities of macroinvertebrates and their functional groups among the three sections (generally higher densities in the control section), and differences among years for some functional groups. However, Analyses of Variance showed no significant section by year interactions, indicating that these differences were not attributable to riparian clearing.