Aspen Restoration by Beaver on Yellowstone's Northern Range

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Aspen (*Populus tremuloides*) on the Gardiner Ranger District of the Gallatin National Forest have declined in recent years. In 1991 beaver were reintroduced into Eagle Creek to stimulate aspen suckering and create more riparian areas. In 2005 a study was initiated to test the hypothesis that beaver increased aspen density and recruitment. We compared active beaver sites (n = 6), sites abandoned for 1-3 years (n = 7), sites abandoned for 4-6 years (n = 4), sites abandoned for 7-11 years (n = 5) and control sites which had less then 10 percent beaver utilization (n = 5). Thirty1-m2 plots were used to determine aspen density and one 60-m2

belt transect was used to calculate size class distributions at each site. Comparisons between sites were made using ANOVA for unequal sample sizes. Aspen densities in active sites and sites abandoned for 1-3 years were similar (2.6/m^2) and increased ($P = 0.01$) compared to all other sites (1/m^2). New sprouts and saplings were greater ($P = 0.01$) on active sites and sites abandoned 1-3 yrs compared to all other sites. Sites abandoned by beaver from 4-11 yrs failed to increase aspen recruitment. We concluded that beaver activity stimulated aspen growth, but ungulate herbivory prevented aspen regeneration in Eagle Creek.