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Decomposition of coarse woody debris in Rocky Mountain coniferous forests: 21-year results
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Volunteer Oral Presentation

Mass loss and changes in C N and P concentrations were assessed in log segments of lodgepole pine white spruce and subalpine fir that had been put on the forest floor in three Rocky Mountain coniferous forests 21 years ago. Pine spruce and fir lost 76 39 and 64% respectively of their initial mass during the 21 years. The corresponding average decay rates were 0.072 0.024 and 0.052. The decay patterns of pine and spruce were similar with the highest decay rate between 6 and 14 years. Fir decay rate increased during the course of decomposition with the highest rate between 14 and 21 years. The correlation between original mass and decay rate was negative for pine (-0.28) positive for fir (0.35) and not significant for spruce. C/N C/P and N/P ratios declined and converged to a similar value in relation to mass loss for all three species. Phosphorus content of logs of all three species increased throughout the 21 years as did N content in pine and spruce) indicating that CWD is a net sink for these nutrients through most of the decay process (up to 80% mass loss). The N:P ratios of logs of all three species stabilized at about 19.