Long-Term Influence of Douglas-fir Urea Fertilization on Forest Floor and Mineral Soil C and N? (S07-edmonds170828-Oral)

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Abstract:

The effects of repeated N applications on forest floor and mineral soil C and N were examined in 20 Douglas-fir stands in western Oregon and Washington. Treated plots received a total of 1120 kg/ha urea N over a 16 year period starting in 1969. Initial stand ages before treatment ranged from 20 to 43 years and site indexes ranged from 22.3 to 44.5 m at 50 years. Urea was initially applied at a rate of 448 kg N/ha. Applications of urea at a rate of 224 kg N/ha were made 8, 12 and 16 years after the initial treatment. Forest floor and mineral soil C and N changes were determined over the period from 1969 to 1995. Fertilization increased forest floor C and N mass compared to untreated control stands. There was a trend for greater C and N accumulation in the forest floor in low productivity stands than in high productivity stands. There was little influence of N fertilization on C and N in the mineral soil to a 15 cm depth.

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