



State University of New York
College of Environmental Science and Forestry

Department of Forest and Natural Resources Management

June 19, 2013

Dear Editor:

Please find attached a submission for consideration for publication in *Soil Research*. "Nutrient concentrations of roots vary with diameter, depth, and site in New Hampshire northern hardwoods" authored by Ruth D. Yanai, Corrie A. Blodgett, Kikang Bae, and Byung B. Park has not been previously published and it has not been simultaneously submitted for publication elsewhere.

This paper tests the importance of root depth as well as diameter (which is more commonly studied) in predicting nutrient concentrations of roots collected from quantitative soil pits in six sites in New Hampshire. The report is novel because roots are rarely collected quantitatively at depths of 50 cm, especially in rocky soils. Some studies have reported root biomass at great depth but have not reported the importance of measuring nutrient concentration as a function of depth. We had the opportunity to collect roots at depth in because of a project studying soils in these stands, and we previously reported the biomass of roots by depth and diameter (Park et al. 2007). Later, we realized the value of these roots for nutrient analysis. Thanks to the quantitative approach to root biomass already published, we were also able, in this paper, to apply the root chemistry to the biomass data set and test the importance of information on differences in root concentration with depth. We found that roots in the organic horizon differed from those in the mineral soil, but that differences with depth in the mineral soil were not very important, which should be welcome news to people working in similar systems. Whether sampling roots for chemical analysis only near the soil surface can be justified in other ecosystem types remains to be tested.

Sincerely,

A handwritten signature in black ink that reads "Ruth Yanai". The signature is written in a cursive style with a long horizontal stroke at the end.

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