



**File Code:** 2720  
**Date:** June 29, 2020

Ruth D. Yanai  
SUNY Department of Forest and Natural Resources Management  
College of Environmental Science  
105 Marshall Hall  
1 Forestry Drive  
Syracuse, NY 13210

Dear Professor Yanai:

Thank you for contacting us about adding the use of chainsaws to your existing approval for the Multiple Element Limitation in Northern Hardwood Ecosystems, MELNHE, Project on the White Mountain National Forest. This project is designed to investigate the relative importance of nitrogen versus phosphorus limitation of plants and soil microbes and has been ongoing since 2004 (soil characterization and tree inventory), with fertilization treatments commencing in 2011. This letter replaces your existing letter and authorizes your work as follows (see attachments to the original approval letter for project locations):

- Continue to fertilize annually, as you have since 2011, by applying 30 kg N/ha/yr as ammonium nitrate on the “N” plots, 10 kg P/ha/yr as monosodium phosphate on the “P” plots, and both applications on the “N+P” plots.
- Re-measure diameters of all 10+ cm trees every four years (last completed in 2015).
- Periodically take soil cores for measurements of N and P availability and mineralization metrics from marker subplots.
- Collect litterfall in laundry baskets 3 times annually.
- Collect foliar samples, using a shotgun, from a subset of sites annually (in late July or early August) for analysis of nutrient ratios and carbon isotope ratios (see additional instruction below).
- Measure water use with Granier sapflow sensors at a subset of sites to assess treatment effects in target study species (pending funding).
- Measure nutrient uptake rates for fine roots of different species and mycorrhizal types (pending funding).
- Collect downed wood samples, using a chainsaw, by cutting disks ~5-10cm thick from each new occurrence of species by decay class (approximately 10-20 samples per site).



Plot corners and internal 10x10m grids may continue to be marked with color-coded ½” PVC stakes labeled with aluminum tags and other measurement locations (soil cores) with pin flags.

When planning to conduct annual foliar sampling and downed wood sampling, your staff must coordinate with White Mountain National Forest district staff to alert them you will be using shotguns and chainsaws in the area. For the Jeffers Brook plots, contact the Pemigewasset Ranger District at 603-536-6100 and, for the Bartlett plots, contact the Saco Ranger District at 603-447-5448. Before sampling, be sure to survey for any wildlife or nests, particularly large stick nests, in and around the sample tree and do not sample where any are at risk of being hit. In addition, please contact the Forest Botanist, Dan Sperduto (603-536-6225), if any rare or unusual plant species are encountered in the project area.

We have determined that a special use permit is not required for this activity. However, we do require that all research materials (i.e., flagging, pins, etc.) be removed from the study area, as well as holes filled, when the study is complete. This authorization is valid through December 2020. Should you require an extension or change to the activities listed above please contact us in a timely fashion

We expect you and your team to follow CDC COVID-19 Guidelines while working in the field and recommend you check our website (<https://www.fs.usda.gov/main/whitemountain/home>) or call the office before going to the field to plan for any Forest closures that may affect your work. Carry a copy of this authorization letter at all times while working on National Forest lands. You may be asked to produce it if encountered by staff in the field.

We look forward to reviewing your results. Please forward us any future publications that involve this research. We appreciate your efforts, any information you can provide us will help us make better decisions on forest management in the future.

Feel free to contact Robert “Andy” Colter, Forest Ecologist and Soil Scientist (603-536-6229, [robert.colter@usda.gov](mailto:robert.colter@usda.gov)), or Erica Roberts, Aquatic Ecologist and Forest Research Coordinator (603-536-6230, [erica.roberts@usda.gov](mailto:erica.roberts@usda.gov)), if you have any further questions.

Sincerely,



JAMIE DAVIDSON  
Acting Forest Supervisor

cc: Joe Nash, Erica Roberts, Andy Colter