

The Ash Protection Experiment (APE)

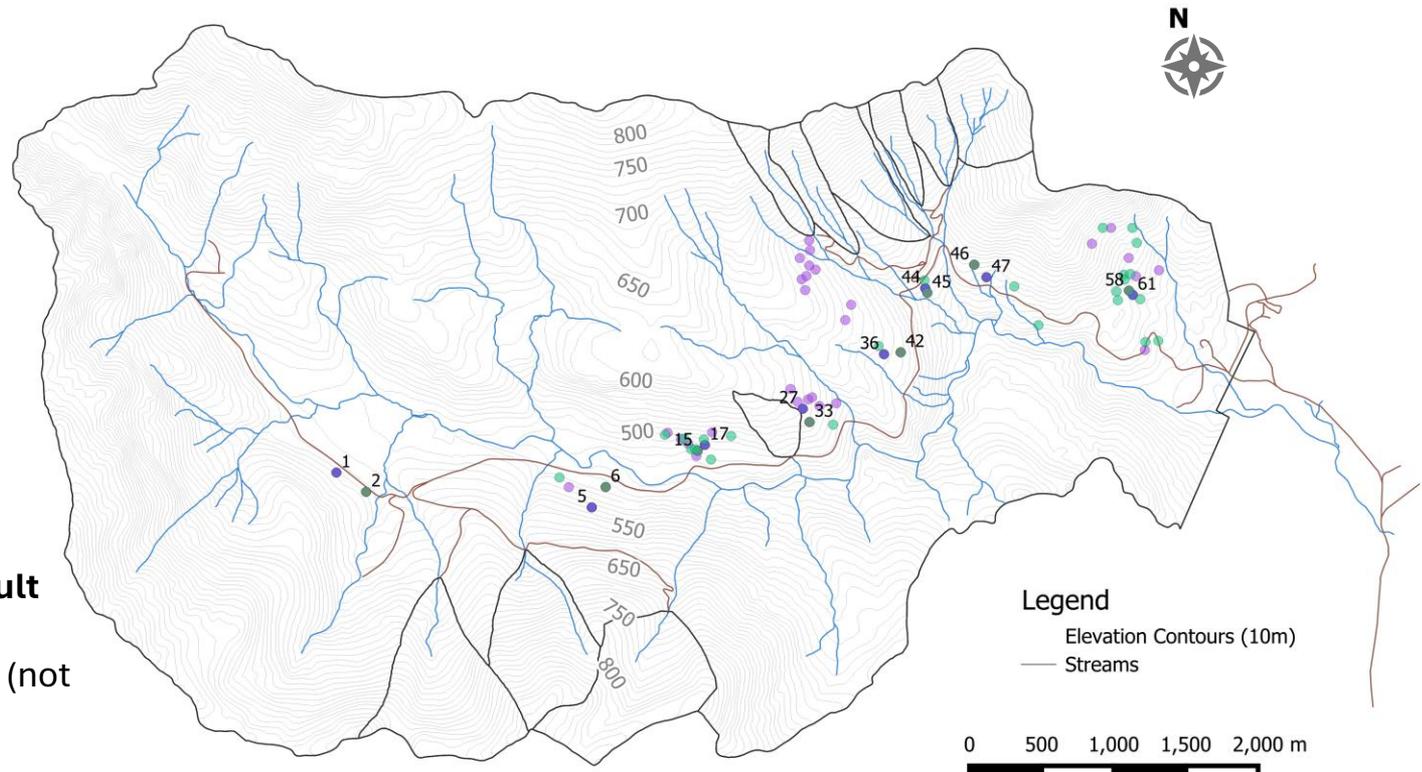
The APE consists of 64 plots (32 treated-green dots and 32 untreated –purple dots). A quarter of these plots are regarded as “intensive” and have a lot more measurements being conducted on them. These 16 plots (8 treated and 8 untreated) are labelled with their respective plot numbers in the map of the valley below.

The plots are circular and 20m in diameter. Ash on treated plots were injected around their bases with the insecticide emamectin benzoate in 2022 and again in 2025-26. Trees will continue to be protected thereafter with treatments every 3-4 years. Treated plots are already showing differences in tree health, leaf production and light levels.



Emerald ash borer adult

The beetles were first detected at HB in 2021 (not to scale).



Intensive APE plot equipment

Treated ash

Injection holes

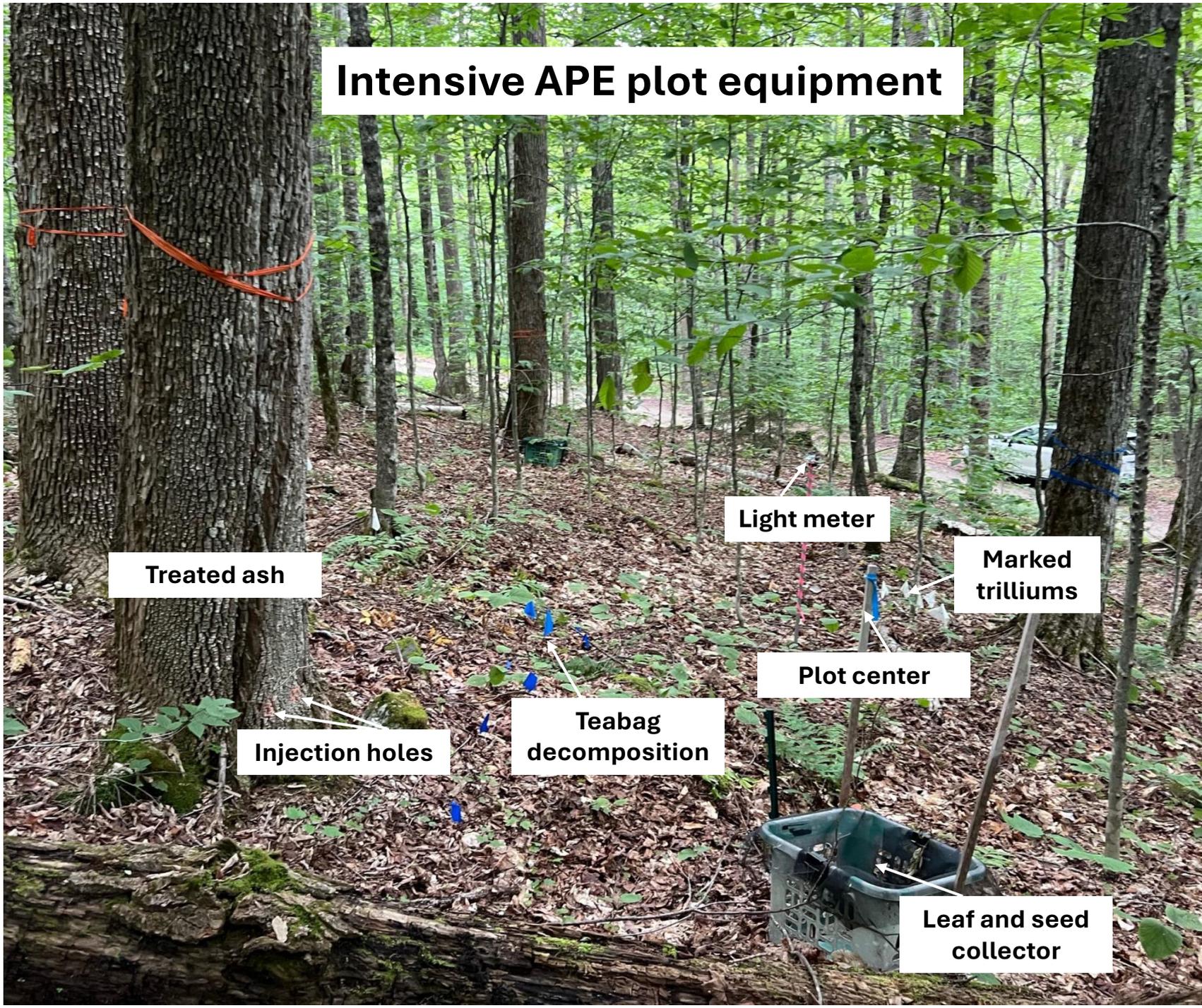
Teabag decomposition

Light meter

Marked trilliums

Plot center

Leaf and seed collector



On the plots you may note plant volatile-baited funnel traps to sample the community of bark- and wood-boring insects that are expected to increase in diversity and abundance due to the resource pulse within Hubbard Brook Experimental Forest of about 25,000 canopy ash trees dying within a few years. The traps are baited with green leaf volatiles (leaf alcohol kairomone) and an aggregation pheromone produced by beetles (Cucujolidae) who can be associates of emerald ash borer in colonizing dying ash trees.

The intensive plots have three laundry baskets for catching leaf and seed inputs. We have already detected an increase in ash leaf production in the treatment plots. Light meters that sample every hour are on metal poles with pink tape around the post. Blue flags mark teabags which help study decomposition rates. White flags (rarely yellow) mark red trillium individuals that are being followed for changes in leaf area, and flower and fruit production.

If you are working on these plots or walking through them, please stay away from the white (or yellow) flags marking trillium individuals. The trilliums senesce as the summer progresses and may not always be visible near the flags. In addition, the trillium suffer mortality from above by deer and from below by rodents eating their rhizome.

You may note woodpecker activity on the affected ash trees and the resulting “blonding” as the woodpeckers strip off the outer bark in search of the grubs.



funnel trap



“Blonding” from woodpecker activity



marked trillium