

An Assessment of Advance Regeneration and Herbaceous Communities in Pennsylvania Forests

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Abstract: Intensive research in several parts of Pennsylvania has demonstrated that dense herbaceous cover can inhibit the development of advance regeneration, and that advance regeneration often is lacking in Pennsylvania forests. The lack of quantitative statewide information on forest understory prompted a study to characterize advance regeneration and fern inhibition for Pennsylvania's forests. The study's primary objectives are to:

- 1) Assess the status and character of advance regeneration.
- 2) Evaluate the abundance and occurrence of fern.
- 3) Estimate the extent and abundance of deer food.
- 4) Correlate composition of understory with overstory vegetation.

Data used in the study were collected by the USDA Forest Service, Northeastern Forest Experiment Station, Forest Inventory and Analysis (NE-FIA) project. Measurements of competing vegetation and seedling regeneration were added to the standard set of NE-FIA measurement variables. Collection techniques were designed to augment existing understory measurements and minimize collection time, and were based on research procedures developed and tested in research studies conducted in Allegheny hardwood and oak forests by Marquis and others. Data were collected during the growing season as the NE-FIA inventory progressed through Pennsylvania.

The analysis of results is in an initial phase intended to evaluate the extent to which NE-FIA measurements can be used to address the study's objectives. The first step was to compile a database containing variables routinely computed by NE-FIA paired with a supplemental set of plot- and county-level attributes. Next, a search will be conducted for relationships between advance regeneration and other parameters such as forest type, stand density, disturbance history, and deer populations. The potential of using the data for spatial analyses also will be examined. This poster describes the regeneration issue in Pennsylvania and presents procedures, plot distribution, and initial results of the study.

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