

## Flight 93 National Memorial Reforestation Project

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**Abstract:** The Flight 93 National Memorial is located in Somerset Co, PA. Starting spring 2012, the National Park Service and Office of Surface Mining Reclamation and Enforcement teamed with others to reforest sections of the reclaimed mineland using native woody trees and shrubs. The purpose of the monitoring project was to evaluate reforestation success and provide data to drive future management decisions. Specifically, this work aims to: 1) Determine survival and establishment success for each woody species planted in each of the four planting phases; 2) evaluate level of deer browse by for each phase; 3) describe competing vegetation across each of the planting phases; and 4) test whether planting position impacts plant growth. One hundred eighteen 0.04 ha permanent, fixed radius plots were established across the planting phases. Species, height, ground-line diameter, vigor class, deer browse, and planting position were determined for each woody plant within the plot. Of the 74,219 trees (1,891 trees/ha) planted, overall survival of planted trees and shrubs was above 55%. Quaking aspen, locust species, and pitch pine consistently performed well with eastern hemlock, sugar maple, and red maple demonstrating the poorest survival and growth. Deer browse was extremely low with 97% of all seedlings showing no sign of deer browse and only 3% being classified as low impact. We found a significant ( $P = 0.006$ ) interaction between plant group (coniferous, deciduous tree, shrub) and planting location. In both coniferous and deciduous tree species. Average height was greater in plants located on the tops of the ripping mounds relative to the middle or bottom locations; however, there was no effect of planting location on shrub height. Early findings will provide baseline data for future comparison as the stands mature, as well as, allow for site-specific decisions on species selection and planting guidelines.

### Additional Key Words:

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