

## American Chestnut Restoration Research



American chestnut was, in many places, the most abundant tree species in its historical range. Its nuts were an important food source for many animals. In addition, it had substantial commercial value and utility. American chestnut was decimated by chestnut blight, an exotic fungal pathogen, in the early part of the twentieth century. By 1950 American chestnut was present only in the understory of forest stands as sprouts from the old root systems of trees that were once in the overstory.

There is great interest in restoring American chestnut in our forests. Breeding programs to produce blight-resistant chestnut have considerable promise. Genetic testing for blight resistance, is being conducted and blight-resistance seedlings will be available for outplanting in limited numbers by 2009. The Forest Service entered into an agreement with The American Chestnut Foundation in 2006 that will guarantee the National Forests a certain percentage of the blight-resistant seedlings. However, little information is known on methods needed to restore this species into forested conditions. We are beginning to investigate artificial regeneration strategies that could be used to restore chestnut when blight-resistant seedlings become available.



# AMERICAN CHESTNUT

Working with [collaborators and partners](#) our studies address potential factors affecting the successful artificial regeneration of American chestnut:

- Site conditions that will promote successful artificial regeneration. For example, will planted American chestnut seedlings grow and thrive on both dry and moist sites?
- Light conditions that will promote successful artificial regeneration. For example, will nursery-grown chestnut seedlings grow and thrive in open (cutover) areas? Or, should the seedlings be planted under full or partial shade conditions within a forest, so that they can develop large root systems that can later support promote rapid height growth?
- Seedling size and quality as a potential influence on successful establishment and growth when they are outplanted.
- Potential interactions among genetics, nursery seedling quality, and environmental conditions such as light and moisture that may affect the performance of outplanted seedlings.

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