

Regeneration Management of Oak and Associated Wild Forages¹

James J. Zaczek²

Ensuring the sustainability and diversity of mixed oak forests is crucial to provide wildlife habitat, high-valued wood, varied recreational opportunities, and clean water in the Eastern Deciduous Forest region. Maintaining an oak forest overstory is also an important aspect in the production of commercially valuable specialty products such as mushrooms and fungi, medicinal herbs, acorns for the nursery trade, acorns as edibles, and other forest-based food products. However, undisturbed mature oak forests are likely to undergo succession to more shade tolerant species resulting in a loss of many overstory and understory associates. Regenerating oak is often problematic. Management techniques are being developed to increase success in the regeneration and restoration of oak ecosystems.

Forest regeneration management for mature forests and afforested areas is presented synthesizing results and experiences from ongoing field studies. In an existing mixed-oak forest, a shelterwood thinning of the overstory combined with shallow soil

scarification in two meter wide strips used to incorporate direct-seeded northern red oak (*Quercus rubra* L.) acorns resulted in 14 times more oak seedlings in the understory compared to undisturbed areas three years after treatment. Additionally, there was an accompanying 260% increase in the number of highbush blackberry and black raspberry (*Rubus allegheniensis* Porter and *R. occidentalis* L.) canes which grew and fruited vigorously in the scarified strips under the increased light levels within the shelterwood thinning. However, density of low sweet blueberry (*Vaccinium angustifolium* Aiton) was reduced by 48% in response to the treatment. Planting oak is necessary in old-field situations to restore afforested areas or to provide forest tree associates in agroforestry systems. When planting northern red oak, studies have indicated that high-quality intensively-cultured oak planting stock such as containerized or 2-0 bare root seedlings that have been undercut in the nursery beds exhibit high survival and rapid growth that is necessary for forest restoration purposes.

¹Poster abstract presented at the North American Conference on Enterprise Development Through Agroforestry: Farming the Agroforest for Specialty Products (Minneapolis, MN, October 4-7, 1998)

²Assistant Professor of Forest Ecology, Southern Illinois University, Carbondale, IL 62901, zaczek@siu.edu