

Project Subject/Title: Bolger Lake Oak Regeneration

County: Oneida

TRS: T 39N R6E sec. 26

Contact Person: Tim Friedrich, 715-358-9237

Type Of Prescription: 3 step Shelterwood/Rx burn

Year Initiated: 1993 initial cut/2003 Rx burn

Abstract/Prescription:

In the autumn of 1993, a harvest was initiated to attempt to regenerate a 9-acre red oak stand on the State-owned Bolger Lake property. The silvicultural prescription for this regeneration trial was a three-step shelterwood. A prescribed fire also was used as an intermediate treatment to eliminate undesirable competition.

The first cut of the 3-step shelterwood harvest, the preparatory cut, was designed to remove aspen from the stand while keeping the crown closure sufficiently high to reduce or eliminate aspen root suckering. The cut also attempted to eliminate as much red maple, an undesirable seed source, from the stand as possible. Low shade, 1-5" diameter saplings, was cut concurrently during this harvest, in an attempt to establish advance oak regeneration.

The sale was closed out in March of 1996. A total of 168 cords and 15 MBF board feet of wood were removed from this 9-acre area in the preparatory cut. Of this total, 6 cords per acre of aspen and 8 cords per acre of red maple were removed from the stand. An estimated 73% crown closure remained following this first cut (estimated from 100 crown closure sample plot transect using the GRS Densitometer).

In the spring of 2003, a 7-acre prescribed burn was conducted to eliminate undesirable regeneration and brush from most of the stand. At the time of the burn, there were 8,200 seedlings/acre in the stand. Of the total, 7% were oak (600/acre), 28% were white pine saplings, 48% maple stump sprout saplings and seedlings and 17% aspen saplings. White pine saplings covered 30-60% of the ground area, ranging in height from 1-3 feet. While oak seedlings were present in the stand, stocking was not uniform and seedlings averaged less than 1 foot in height. A significant amount of hazel over 3 feet in height was also present before the burn. The prescribed burn firing pattern chosen was a strip head fire. Strips were modified in width to

keep scorch to a 2-3 foot maximum height. The objective of the burn was to eliminate 90% of competing vegetation with a 0% overstory kill acceptable.

Results:

The burn was conducted on May 14, 2003. The burn was timed to coincide with the emergence of hazel leaves (the size of a squirrel's ear). The burn began at noon and was completed by 1:00 p.m. The total equipment cost of the burn was \$123. DNR time that was donated was \$460, including mop up. The results of the burn were 97% top kill or elimination of competing vegetation with less than a 2% overstory tree kill. About 100% of the burn area was covered and 95% of the duff was removed.

In July of 2004, there are 5,700 seedlings per acre. All seedlings are less than 1 foot in height, averaging between 6-10". Of the total, 45% are white birch, 23% are red oak (1,350 seedlings/acre), 17% are red maple and 15% are aspen (aspen is concentrated to clumps occupying less than 10% of the stand). Red oak regeneration is not present in all parts of the stand currently.

A seed cut, the second cut in the 3-step shelterwood harvest is being established for harvest in 2005. This cut will remove most undesirable seed source trees and will create enough vacant growing space for oak seedlings to become established and to grow. Overstory crown closure will be kept at 50%. A total of 6 MBF, mostly quality red oak, and 7 cords are to be harvested on the 7 acre site. It is doubtful that this volume would sell on its own merit, but it is part of a larger sale that will sell.

Discussion/Recommendations:

In 3-5 years, the site will be reexamined for an overstory removal cut. Because this is a wildlife property with high aesthetic concerns along a town road and Bolger Lake, the removal cut will be modified for aesthetic and wildlife concerns. Not more than 20% crown closure will be retained in this release cut, in the form of large crown red oak trees. Monitoring will continue on this site.