

Project Subject/Title: Crystal Lake Thinning Techniques

County: Washburn

TRS: T38N, R11W Sec. 7

Contact Person: Jim Halvorson, 715-635-4081

Type Of Prescription: Various thinning techniques

Year Initiated: 1980

Abstract/Prescription:

This study was initiated in 1980 to evaluate various aspects of timber sale establishment in northern hardwood such as epicormic branching, forester marking productivity, logability, impacts on regeneration, and growth response after cutting. The stand is a 80 acre red oak/northern hardwood pole stand. Basal area was 125, stand age 79 years and the stand was exhibiting a 30% reduction in growth rate due to overstocked conditions. The five thinning treatments were marked selection, strip selection, strip-marked selection, patch cut, and clearcut.

Results:

See enclosed Document

Northern Hardwood

FENAMBER ROAD
CRYSTAL BROOK THINNING TECHNIQUES (SEC 7-38-11)

Background

This study was initiated in the summer of 1980 to examine a number of questions as they relate to:

TIMBER SALE COMPLETED 1982

- pole NRO growth response following cutting
- epicormic branching
- forester marking productivity
- logability
- impacts on regeneration

The stand is a pole NRO/NH stand. Basal area was 125, stand age 79 years and the stand was exhibiting a 30% reduction in growth due to overstocked conditions. An 80 acre test site was established with 5 associated thinning treatments carried out.

- Marked selection
- Strip selection
- Strip-marked selection
- Patch cut
- Clearcut

Discussion

Marked selection - this area is comprised of 26 acres. Trees to be cut were marked in orange and stocking reduced to 90 BA (improvement cut) with all of the aspen being removed. Response to thinning was minimal. Due to small crowns growth response is expected to be delayed (10-15 yrs) or until the narrow crowns can fully occupy the site. Epicormic branching is minimal on this site as dominant/co-dominant crop trees were left. However, a point of concern where epicormics are present, particularly on co-dominant and dominant NRO, it is unpredictable. Forester productivity was 1.4 acres/hr. Total volume removed amounted to 67 cds NRO and 45 cds of mixed hardwood and aspen. Average volume per acre amounted to 4.31 cds/ac. Logability was poor due to high number of residual stems and potential residual damage. The volume of 4.31 cds/ac was low and pushes merchantability of this area to the limit. Regeneration of shade tolerant species was promoted. Weed species on the site was minimal due to the remaining residual basal area.

Strip Selection A - This area is comprised of 12 acres. This site was mechanically strip marked in a wishbone pattern. Main skidding corridors were marked 72 ft. apart in orange with alternate perpendicular strips marked 44 ft. apart and 30 ft. long in yellow. Response to thinning was minimal for the same reasons mentioned in the marked selection. Epicormic branching apparent on adjacent trees. This could be reduced by narrowing of skid trails. Forester productivity was excessive, and of the 5 treatments attempted, this method took the longest. Also silviculturally this method was the poorest as no consideration was given to releasing potential crop trees. The method again was strictly mechanical. One positive note is the flush of both tolerant and intolerant species within the wider skidding corridor. Benefits to both wildlife and maintenance of more intolerant hardwoods should be noted. A total of 7.33 cds/ac were removed.

Strip Selection B - This area is comprised of 16 acres. This site was marked in strips 77 ft. apart and selectively marked between. Productivity approximately .8 - 1 ac/yr. Response to the thinning is slow due to the reasons previously mentioned. This method deserves additional attention as it gives consideration to crop tree release and provides for skidding corridors. However, when compared to the typical marked improvement cut marking time (forester productivity) was slower. Response of regeneration and epicormic branching is similar to the marked site. Total cords removed was 6.75 cbs/ac.

Patch Cut - This area is comprised of 12 acres. Alternating patches measuring 7 x 2 chains were marked in a patchwork design. All trees were cut in those patches. All the patches are fully stocked with a good mix of hardwood species. The majority of the regeneration is originated from stump sprouts. Wildlife potential is good as cut patches are relatively dense and are providing a unique cover/refuge as compared to the surrounding open hardwood cover. This method can be considered if the management goal is to maintain 50% of the site in more intolerant species. The remaining portions can be managed for your more tolerant species via conventional marking. Total volume cut was 11 cbs/ac.

Clearcut - This area is comprised of 6 acres. All trees within this area were harvested. The entire area is fully stocked with a variety of species. Oak regeneration via stump sprouting was good. A counted number per acre has not been completed and will be done next spring. Oak regeneration on this site was released and sprouts thinned 11 years after the cut.

This method is not a typical recommended treatment as the proportion of stump versus seed origin sprouts is high. It would be best to follow your normal management scheme of initial shelterwood cuts followed by a final harvest. Total volume removed is 22 cbs/ac.

Recommendations

Excellent site to review a variety of different cuts and should be maintained as a study area. The marked selection, uncut patches, and strip cuts should be followed up with periodic improvement cuts to encourage your tolerant hardwoods and the clearcut and cut patches should be managed for your intolerant hardwood complexes with periodic cultural treatments to encourage oak. It is also recommended that wildlife take a close look at both cuts and summarize wildlife opportunities/benefits.