

SILVICULTURAL FIELD TRIAL

White Birch Regeneration Attempt

- **Compartment #109, Stand #6**
- **Legal:** N1/2SW, W1/2SE Sec 10 - T37N - R4E
 - Town of Lynne
- **Harvest Area:** 50 acres
- **General:**
 - Aesthetic concerns: trails and a boat landing
 - Habitat type is ATM
 - White birch site index on this site is 60.
 - Little advanced regeneration of any kind
 - Hazel understory
- **Prescription:** Shelterwood harvest, maintain 40-50% crown closure. Scarify late summer following logging, after aspen seed dispersal. Cut all 1-5" trees, except aspen.
- **Estimated Volumes:**
 - » Hdwd ---240 cords
 - » White Birch ---180 cords
 - » Balsam Fir ---10 cords
- **Date Harvest Complete:** 11-1992
- **Scarified in August of 1992** using the JD 450 tractor/plow, with the Tomahawk rake on the blade.
 - » Achieved 60-70% mineral soil
 - » Logging slash was in small piles
 - » Attempted to not excessively mix the soil
 - » Scarify occurred after aspen seed dispersal (June)
- **Monitoring:** August of 1993, 13- 1/1000 acre random, permanent plots, with one control (no scarification) were established.
- **1993**
- 36,000 white birch seedlings per acre, <1" tall.
- Average crown closure was 47%
- Average plot scarification 40%
- Competition mainly sedge, with bracken fern, aster and some hazel, <1' tall.
- **1996**
- 4,800 white birch seedlings per acre, 2' tall.
- Average crown closure was 48%
- Average plot scarification 1%
- Competition mainly hazel, rubus and ferns < 2' tall.

- Overstory removal timber sale was established by LKT DNR in 9/23/97. 330 cords and 9 MBF of birch and hardwood were removed. Harvest was done in winter, as literature suggested. There was ample established BW regen present at time of overstory removal.
- **DNR Reorg occurred in 1997.** LKT was no longer a part of the Rhinelander team. Lost track of this project for over a decade with other assignments.
- Once cut (late 1990s?), deer flocked in to harvest area for tops that were freshly cut. Did severe damage to established seedlings.
- Following overstory removal (presumably by 2000), a walk through by Oneida Co forestry staff determined browsing to have eliminated BW seedlings.
- In the early 2000's, I revisited the revisited. There was ample BW regen that was developing fine in the eastern ¼ of the sale – close to human population. My impression was that of the County's - the remainder of the area was a BW regeneration failure, due to browsing. Much hazel present in the stand.
- In 2011 revisited the site again for a Team training session in BW shelterwood marking. Had a Team marking exercise in 2009 on a different area of the County forest. Wanted to look at that and show this past attempt. When walking through the area in October 2011, I was amazed at the amount of BW saplings present. The leaves were off all trees except BW at that time – making it very easy to identify the amount of BW present in the stand. Numerous BW stems had turned white over the past several years as well. My impression was that the entire stand might be a fully stocked BW stand now.
- Took 37 - 1/1,000 acre plots on a grid on November 8, 2011 in the stand, resulting in the following:
 - on the average, there is 3,729 saplings per acre present
 - of that amount, there are 2,000 BW saplings/acre present, on the average
 - 70% of 1/1000th acre plots taken had at least 1 BW sapling present
 - 30% of the plots with BW present have not yet escaped browse level, some 11-13 years after overstory removal (<6 feet tall)
 - Upland brush (hazel) prolific in parts of the stand is protecting birch from browse. It is believed that BW will outgrow current browsing because of it.

WHITE BIRCH REGENERATION STUDY

-Recommendations

TO REGENERATE WHITE BIRCH:

- Reduce overstory shade to 30-40%
 - high crown density levels have been better to prevent seedling desiccation and reduce annual plant competition
 - mark leave trees based on desired crown closure
 - to determine approximate spacing in feet between leave trees
 - a) Measure at least 6 representative crown areas of leave trees
 - b) Use shelterwood calculator or spacing between leave tree formula
- **Do Not** cut any aspen and cut as little red maple as possible
- Require the logger to cut 1-5" residual trees and keep stump heights to 6" max
- Scarify following the harvest AFTER aspen seed dispersal in June, exposing 50% mineral soil
 - Full tree skidding may provide sufficient scarification
 - Pole skidding often does not provide adequate scarification
 - Heavy mixing of soil is not recommended
- Evaluate regeneration in 2-3 years
 - if BW regeneration is adequate and overstory shade is 30% or less, DO NOT remove overstory
 - If overstory is >30%,
 - a) Remove overstory during snow-free months
 - b) Short wood skid
 - c) Leave high tops to protect regeneration

*** Only 6 – 12 white birch seed trees per acre are needed to regenerate white birch**