

Northern Hardwood

Project Subject/Title: East Frog Creek Northern Hardwood Salmon Blade

Contact Person: Amy Morales (715)635-4082 WDNR Liaison

Abstract: A northern hardwood stand located in Washburn County was set up for a shelterwood harvest in 2004. Prior to the shelterwood harvest, 9 acres of the stand was scarified using a salmon blade while 8 acres of the stand was not scarified and left as a control to compare to the scarified site. There was an abundant amount of musciewood within the stand before the scarification that was a severe competitor with the hardwood regeneration. Scarifying with the salmon blade was done in order to provide ideal conditions for hardwood regeneration as well as limit the abundance of the musciewood competition.

Trial Location:

County: Washburn

Township: 42N **Range:** 10W **Section:** 33

GPS Coordinates: Lat: 46°4'26" **Long:** -91°37'46"

Property Name: Washburn County Forest

Baseline Stand Data

- *Cover Type:* Northern Hardwood
- *Acres:* 17 acres
- *Habitat Type:* AAt
- *Soil Type:* Frog Creek silt loam
- *Year of Origin:*
- *Total Height:*
- *Site Index Species and Site Index:* 55
- *Mean Stand Diameter:*
- *Total Basal Area per Acre:*
- *Other stand Condition:*

Prescription and Methods:

- *Type of Prescription:* Shelterwood, site preparation
- *Year Initiated:* 2004
- *Establishment Methods:*

The site was harvested using the shelterwood system in 2006. Crown cover was to be reduced to about 60% on average throughout the stand. Prior to the shelterwood, 9 acres of northwood hardwood was scarified with a salmon blade while 8 acres were left as a control. As of 2014, there has not been another harvest within the northern hardwood area.

- *Data Collection Methods:*

Northern Hardwood

The site was revisited in 2009 and in 2014. Regeneration surveys were conducted by establishing mil-acre plots throughout both the scarified area and the control area. Competition from undesirable species such as musclewood was also assessed.

Results: When the site was revisited in 2009, 100% of the plots measured were considered to be stocked. It should be noted that this regeneration survey was conducted in white birch stands adjacent to the northern hardwood stand that was harvested at the same time. In 2014, regeneration surveys done in the scarified area of the northern hardwood stand produced a total of 11,200 stems/acre while the control area produced a total of 3,000 stems/acre. The majority of the regeneration found in the surveys was white birch with 4,600 stems/acre in the scarified area and 1,750 stems/acre in the control area. White ash, sugar maple, red oak and aspen were also common within the scarified area while only sugar maple was found to be common in the control area. Musclewood was present in both areas but was found to be far more prevalent in the control area.

Discussion/Recommendations: Although both the scarified area and the control area had a lot of regeneration throughout, the control had far less species diversity and more competition from undesirable species like musclewood. In areas where musclewood was abundant, the regeneration of white birch and northern hardwood was being outcompeted in growth and numbers of stems. Regeneration found in both areas was tall and aspen was being out-competed in most areas. Overall, the salmon blade scarification appeared to give the desirable regenerating species the competitive advantage by limiting musclewood abundance.

