

Northern Hardwood

Project Subject/Title: Experimental Hardwood Shelterwood

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Abstract: A 20 acre northern hardwood stand located in Washburn County was prescribed to be harvested using the shelterwood method. The stand was to be marked down to three different basal areas: 40, 50 and 60 square feet per acre. The goal was to see how the hardwood regeneration and residual stand would respond to the various amounts of sunlight. Competition from ironwood has been an issue in the area when trying to regenerate the northern hardwood type.

Trial Location:

County: Washburn

Township: 42N **Range:** 10W **Section:** 28, 33

GPS Coordinates: Lat: 46°4'58" **Long:** -91°37'5"

Property Name: Washburn County Forest

Baseline Stand Data

- *Cover Type:* Northern Hardwood
- *Acres:* 20 acres
- *Habitat Type:* AVDe
- *Soil Type:* Stanberry sandy loam
- *Year of Origin:*
- *Total Height:* 75
- *Site Index Species and Site Index:*
- *Mean Stand Diameter:*
- *Total Basal Area per Acre:* 50
- *Other stand Condition:*

Prescription and Methods:

- *Type of Prescription:* Shelterwood
- *Year Initiated:* 2005
- *Establishment Methods:*

The 20 acre northern hardwood stand was leave-tree marked down to three different residual basal areas. The northern section was marked down to 40 square feet per acre, the middle section was marked down to 50 square feet per acre and the southern section was marked down to 60 square feet per acre. All unmerchantable stems were to be severed.

- *Data Collection Methods:*

The stand was revisited in August of 2014. Fifteen mil-acre plots were established within the stand (5 in each different residual basal area section). The amount of regeneration was

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counted and divided up into stems greater than 3 feet in height and stems less than 3 feet in height. Overstory vigor and competing vegetation were also assessed during the regeneration survey.

Results: The most numerous regenerating species was sugar maple with a total of 7,125 stems per acre. White ash was the second most numerous species with 696 stems per acre, American basswood was third with 536 stems per acre and red oak was fourth with 429 stems per acre. Red maple, aspen and white birch were also present in the stand but in lower numbers. The average basal area found in the stand was 60 square feet per acre. Ironwood was present throughout the stand but was not a severe competitor with the hardwood regeneration. In the few areas where sedge was present and thick, the amount of regeneration was less than in areas without thick sedge. The remaining overstory looked healthy but there was some dieback present.

Discussion/Recommendations: Overall, the stand looked healthy and there was abundant advanced regeneration throughout the stand. The basal area of the stand would have been higher if it wasn't for the dieback that was present throughout the stand. The open canopy appeared to help release the regeneration but was most likely the cause of the amount of dieback and wind-throw of the residual trees.

