

Marinette County – Ironwood & Beech Control with dozer/roller chopper

Project Subject/Title: Ironwood and Beech Control in a Northern Hardwood Shelterwood (Fisherman Lane)

Contact Person: Dan Mertz or Marinette County Liaison

Abstract: *In August of 2020, a heavy understory of ironwood and beech saplings in a Northern Hardwood Sawtimber stand on the Marinette County Forest was trampled using a DNR Fire Control dozer with a straight blade OR a dozer pulling a single drum roller chopper. A total of 32 acres was treated pre-harvest as part of a larger shelterwood harvest which is anticipated to be harvested in 2021-2023.*

Trial Location:

County: Marinette

Township: 34N **Range:** 17E **Section:** 11 (SW ¼)

GPS Coordinates: Lat: 45.433001 Long: -88.344449

Property Name: Marinette County Forest

Site Map: Attached

Baseline Stand Data:

- *Cover Type* **NH 1500(2)/NH 1115(1)**
- *Acres* **32**
- *Habitat Type* **AFVb (Acer-Fagus-Viburnum**
- *Soil Type* **Sarona Fine Sandy Loam**
- *Year of Origin* **Oldest sawtimber is 80-120 years old**
- *Total Height*
- *Site Index Species and Site Index*
- *Mean Stand Diameter* **15 inches**
- *Total Basal Area per acre* **107**
- *Other stand conditions* **This is primarily a stand of low quality sugar maple and basswood sawtimber with scattered beech sawtimber. Not much white ash.**

Prescription and Methods:

- *Type of prescription* **Mechanical Site Preparation Pre-Harvest**

- *Year initiated August 2020*
- *Establishment methods (timing, equipment, etc.) DNR Fire Control Dozer with straight blade OR dozer with single drum roller chopper*
- *Data collection methods Data was collected using standard DNR forest reconnaissance methods. Sapling counts were determined using 1/500 acre plots.*

Results: *There are no results to report on yet since this trial was conducted in August 2020 and this write up is occurring in December of 2020. The timber has not been sold yet, but hopefully will be sold in spring of 2021 and cut within 2 years after that.*

Discussion/Recommendations: *The Marinette County Forest has virtually no desirable regeneration on it's 20,000 acres of Northern Hardwood timber type. Single tree selection has not worked. Many stands in the last 20 years have developed an understory of ironwood and in some areas, beech. Different regeneration methods must be tried and the ironwood/beech understory needs to be dealt with.*

A few stands on the Marinette County Forest are candidates for the shelterwood regeneration method. These stands contain predominantly low quality sugar maple sawtimber and in some cases, large amounts of white ash sawtimber which will die soon due to EAB. This presents opportunities for experimentation with the shelterwood regeneration system.

The Fisherman Lane stand, which is being treated in this trial, was last harvested 22 years ago, in 1998. Since then, a heavy ironwood and beech understory has developed. Regeneration plots show the following amounts of ironwood, beech, and sugar maple:

<i>Ironwood</i>	<i>700 seedlings and saplings/acre</i>
<i>Beech</i>	<i>1225 seedlings and saplings/acre</i>
<i>Sugar Maple</i>	<i>250 seedlings/acre</i>

It is important to note that none of the sugar maple have reached the sapling size and most of the sugar maple are shorter than 2 feet and are heavily browsed, while the ironwood and beech saplings are typically taller than 10 feet and have an average DBH of 1-2 inches. Many sugar maple seedlings were found to be dead due to the browsing and heavy shading by ironwood and beech.

The stand was marked for a shelterwood, trying to achieve a 60% crown closure. Crowns were measured to help determine the spacing of leave trees. All beech will be cut.

On a portion of the harvest area, it was decided to deal with the understory before the harvest took place. It was originally intended to site prep the entire area, but

due to rockiness, it was obvious that some areas could not be done with a tracked dozer.

THE INTENT OF THE SITE PREP WAS NOT to uproot the undesirables or scarify the soil surface, although some of this did occur. The intent was to lay the stems down on the soils surface and scar the stems up. Some of this work was done a few years ago on the county forest and the ironwood and beech “fizzled out” as they lay on the ground, scarred up. So, this method seems to hold some promise.

At Fisherman Lane, the first “tool” to be tried was the ANCHOR CHAINS. After a good effort the anchor chains were abandoned because the visibility through the dense understory was very poor and the operator could not look ahead and plan a route through the standing timber without hitting trees. The chains are long, cumbersome, and awkward to get through a stand, especially if the visibility is poor.

The second “tool” to be tried, was a single drum ROLLER CHOPPER which is owned by Marinette County and has blades on it that are about 8 inches long. It is believed that since the blades are relatively short and do not penetrate the soils too much, they will not do much root damage to the overstory trees which are being retained for the shelterwood. The blades also ride on top of the ironwood and beech saplings. In combination with the dozer tracks and the dozer blade, the roller chopper scars up and lays down the ironwood and beech. The problem with the roller chopper is that, like the anchor chains, it is cumbersome to use in a fully stocked stand of northern hardwoods with poor visibility. In addition, you get skips i.e. areas that are hard to treat due to the bulkiness of the dozer and chopper. So, at Fisherman Lane, only 9 acres of the treated area was done by the roller chopper. The rest was done by a dozer with no implement attached. See the map.

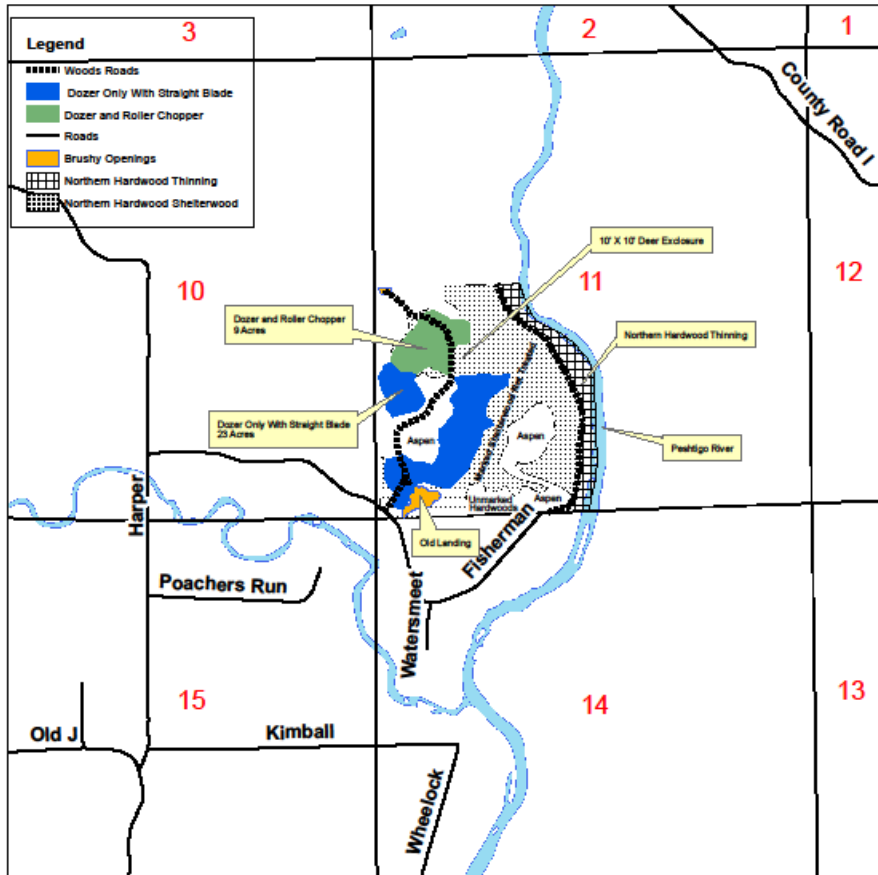
The third and last “tool” to be used was the DNR DOZER WITH NO ATTACHMENTS. This proved to be the most effective method and the quickest, although production rates were not recorded. The dozer, by itself is more versatile and can sneak between trees, getting more of the ironwood and beech knocked down. A total of 23 acres was treated using this method. Once again, the intention was not to uproot the saplings or scarify the soil, but a fair amount of this did occur. The primary intention was to trample the saplings and scar them up.

Map

Ironwood and Beech Control in a Northern Hardwood Shelterwood (Fisherman Lane)



SW 1/4 Section 11, T34N-R17E....Town of Silver Cliff
Marinette County Forest



Compartment 406

Scale: 4" = 1 Mile

Mapped by: Dan Mertz (715) 927-2042