Baron’s Tract: Section 12

The Baron’s tract is located in the southwest ¼ of Section 12 T49N, R34W of Baraga County in the Upper Peninsula of Michigan. This particular piece of land is owned by the Michigan Technological University’s Ford Forestry Center. Section 12 is a unique site dominated by mature, natural red pine. It is believed that this stand established at the turn of the century subsequent to a fire. This site is at an important stage in its development. Although natural red pine is throughout the tract, other species are gaining in abundance. Therefore, if management is not conducted soon the natural red pine component may decrease throughout the site. The maple species component is increasing in a few locations, which has the potential to succeed and displace the red pine in many locations. This tract also has some unique Eastern hemlock relics, which add to the diversity of the site.

The graduate FERM team has visited the tract this spring term and has completed a variety of tasks. There were a variety of tasks that needed to be finished at the site, so our graduate team volunteered to help out. First, our team visited the site and assessed the vegetation, as well as ran the east property line of the tract. Later, our team obtained accurate GPS coordinates of the southeastern corner, which was used to georeference the continuous forest inventory (CFI) plot locations on the tract. We were successful in locating the CFI plot locations and have proved that using GPS technology to locate past study plots is possible and quite efficient.

One of our team’s main objectives was to research red pine silviculture practices and apply our knowledge of these to create some management proposals. We also studied the importance of fire in the process of red pine regeneration and stand establishment. The team
met with Linda Nagel and Christopher Webster to discuss red pine silviculture, which further helped us develop our management proposals.

As stated earlier, the main objective of our involvement with this project was to determine a management plan for this particular site. There is an overall opinion within the school that the stand should remain as a natural red pine site and that any management activities that occur should be geared towards this result. Although this sounds like an easy task there is not many case studies of natural red pine regeneration to follow. During our literature research we came across studies that used shelterwood/seedtree treatments as well as the use of a fire regime to increase regeneration. We feel that the use of these silvicultural practices would be beneficial to the regeneration of the red pine. We propose creating openings that are designed to reduce wind-throw, promote seed dispersal, and seedling establishment. These openings would have a residual basal area of approximately 50 sq. ft. per acre, which should provide seed trees and openings to promote seedling establishment. This treatment should be applied to areas where the possibility of wind-throw is less of a risk. Prescribed burning can be applied with this treatment, and the burn intervals can be applied to some areas. In our readings we found that a 2-year burn interval should be used in areas where there is large amounts of competing understory vegetation. Where the stand is dominated by red pine without the presence of competing understory vegetation a 10-year burn interval may be used to enhance seedling establishment and regeneration.

Another aspect of our management proposal is the reduction of the hardwood component within the red pine. Removal techniques may vary within the stand, and is dependant on the
tree size and conditions. Herbicide use may be necessary where the maple is prevalent. And its use may be needed throughout the managed area until favorable conditions for red pine seedlings exist. The maple that is encroaching into the pine openings is of a relatively small diameter and removal would be advised as soon as possible. Regeneration of the maple can be controlled with both herbicide and prescribed burning at this point.

We propose to leave the Eastern hemlock sites in their current state or using minimal management for regeneration purposes. Removal of the hardwood species in these areas will increase the chance of regeneration. Because these areas are relatively small this may be done by hand felling of the hardwood species. Scarification and site preparation may also aid in the regeneration of Eastern hemlock as well.

There is a considerable component of poor quality Northern red oak within the red pine stand that could be managed. The reduction of this component by removing larger low quality trees will help by providing openings to establish red pine regeneration, as well as hopefully giving the opportunity to manage higher quality Northern red oak if desired.

This tract of land is an important resource that should be managed carefully and thoughtfully. Due to the fact that pure natural red pine stands are becoming increasingly rare we believe that this stand should be managed as a natural stand and as a learning opportunity to help increase the information on natural red pine regeneration. Promoting natural regeneration is very important and should be the main objective of the stand. Our management proposals have been designed to increase the natural red pine component to ensure its future dominance.
at this site. Therefore, future study and management should be geared towards prescriptions that have been or are geared towards successful at regeneration red pine in natural stands.
Baron’s Tract (Section 12) Implementation Report

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Spring 2005

April 24th, 2005

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