In partial fulfillment of the requirements of Silviculuture 132 and the entire crew has read and agrees with all the information contained in this report.

**Ausable Plot**

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Crew Members:
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Location: Off Route 30, The Old Boy Scouts Camp, Osgood Pond

Species:
White Pine Stand (Artificial)

Date:
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Plot Location

The Ausable Plot is located north of Paul Smith's College at about 7.7 miles. On the South East side of its boarders is Osgood Pond, and an old horse barn. On the Western boarders you will find Route 30, and the Visitor Interpretive Center. On the Northern side of the plot is the Freeburn Plot. The Jackrabbit Trail divides the Ausable Plot in two, as it runs through the middle. This area was once used and operated as an old Boy Scouts Camp.
The Ausable Plot is a stand of White pine (Pinus strobus). This Stand is an artificially planted stand. The plot is very dense with very little undergrowth because of the thinck crown closure. The group that worked on this stand in the past started out with 300 sq. ft. of basal area, and when they were finished there was 120 sq. ft. of basal area. When we started working on the plot we started out with an estimation of 131.946 sq. ft. basal area, and when we finished our estimation of sq. ft. basal area was about 54. 912. We estimated that this stand is about 30-35 years in age. We had mostly White pine in our stand, but we had a few Scots pine, Yellow birch, and White birch. The majority of our stand consisted with White pine (Pinus strobus). We had the Jack Rabbit trail running through the center of our stand. We had to take this into consideration when we were working our plot. The slope of the plot is very flat. We had some White pine Blister rust on the trees, but their wasn’t much of it.
Upon the groups evaluation of the Ausable Plot we decided to implement a management plan that would encourage the growth of the stronger healthier trees. The competition in the Ausable was initially very high with many suppressed trees that were not in good health and we also had several trees that were already dead. This is an even aged stand and has about 400 trees. We measured 301 trees with a DBH of 3.5 inches and above. It was our intention as a crew to improve the site quality by removing the dead or dying trees and the trees that would not be able to survive and thrive. The site has very little aspect, so the issue of soil erosion doesn’t really apply. The fact that our harvesting was done in the winter creates less soil compaction and there was no use of a skidder due to our logs not meeting the proper size requirements. In the next 10 years or so our crew would like to see the remaining white Pines grow and have the potential for timber harvest. After our harvest was complete our group decided to leave our downed trees for decay or nutrient recycling, wildlife protection and a nutrient source for other types of wildlife. It was not the intention of our crew to create a habitat that was would prevent wildlife from using the area.

There is always a risk of “shock” to the stand when there has been any type of disturbance either natural or man made. Within the stand there may be some sections where there may be a drastic increase in light and space which may possibly have an adverse effect to the stand. Another adverse effect of implementing our management would be the short period of time when the aesthetics would be effected form all the downed debris. In any type of operation there will always be some sort of impact on the environment, it was our goal as a group to keep the negative impacts at a minimum. I
The statement that “Impacts that harm the environment may be beneficial to the human environment” has a different meaning to each individual, however after discussing this concept with the crew we are all in agreement that it deals with exploitation of the forest rather than make use of the proper management skills. Often time’s foresters look at the financial gain rather than the impact that their actions have on the forest. An example of this is high grading timber. The initial amount of financial return may be large, but now there are no strong genetic trees for reproduction eventually the stand becomes unhealthy and weak.

I feel that as a crew we had a positive environmental impact for several reasons one of which was creating cover, or habitat for wildlife. Another reason that I feel we had a positive effect on our plot was because we didn’t have to use any heavy equipment that would have a negative impact on the soil. Also we decreased the competition rate for the stronger trees, with the hopes that they will respond with a vinous growth rate. By taking out the dead or dying trees now we enable the remaining trees to absorb light, water and nutrients that may have not been available before.

Our crew can easily justify our actions by sampling saying that if nothing had been done, if we had left the stand to manage itself, in another 10 to 15 years the number of dead or dying trees would have out numbered the total amount of healthy trees. This stand would have been so over stocked that essentially it would have killed itself off. It was with this fact in mind that we went into the stand with the goal of creating more
By taking these actions our crew wanted to increase site productivity and site health.

The question is what benefits do we obtain now, as compared to what will be obtained in the future? If you were to look at the Ausable Plot from strictly a financial perspective there would have been no benefits from this thinning. The trees that were cut had no merchantable value. Most of the trees were either dead, dying or too small to for the saw mills. It was not our intension to get financial rewards out of this tending; it was to allow for further healthy growth, while creating a sustainable wildlife habitat. We feel that this was a significant benefit. In the future this stand has the potential to turn a profit. In another rotation (about 10 years or so) the thriving White Pines that were left behind should be ready for harvest.

During our thinning operation our biggest environmental impact would be the downed debris. Although this is not a negative impact it still has the ability to change the area, and support wildlife that may not have entered the area before due to lack of cover or protection from other predators. There was no use of the skidders or other heavy equipment so soil scarification have an impact, in fact while our crew proceeded with the cutting, there were still several inches of snow on the ground, which again keeps compaction at a minimum. The downed debris will return to the soil and provide nutrients for the remaining trees. It was our goal as a crew to keep the amount of negative environmental impact to the smallest extent possible, however it would be naive to say that there was no damage done at all to the stand, it is our hopes that the positives impacts outweigh the negative impacts.
When a forester is considering to implement silviculture on any stand the forester is the link between the landowner and the logger, and the logger and the miller. It is critical that a good forester takes into consideration all of the variable before choosing to thin, tend, or implement a harvest system. He must take into consideration a wide range of things from the type of soil, the amount of precipitation, the tree species that is present and whether the forestland is a critical part of the water system. Watersheds are becoming particularly important to the ever growing society and are vital parts of the ecosystem.

Within the Ausable Plot the concern with erosion and soil depletion was minimal first off is because it was on a fairly flat surface where there would be little run off. Secondly the operation was performed while the ground was still somewhat frozen which kept soil compaction to a minimum. The operation was a free thinning a no heavy machinery need to be brought in to skid timber out of the forest (Burns 1990).

The main species in the Ausable Plot was Eastern White Pine. This species is found across Southern Canada and throughout most of New England and New York State. It is one of the largest trees in the eastern United States reaching heights of 150 feet and diameters of 40 inches when mature. Trees as large as 60 inches at DBH have been found in parts of Minnesota (Burns 1990).

White Pine enjoys a climate that is cool and humid, July temperatures for the Eastern White Pine average from 64 to 74 degrees Farenheight. The White Pine likes
drained sandy deposits of sand and gravel. The soils are derived from granites, gneisses, schists, and sandstone. The White Pine will grow on almost all of the soils in its range however will compete most successfully on the well drained sandy soils that were mentioned earlier, these soils have only medium site quality. These types of soils are favorable to the white pine and rule out any competition from hardwoods. At different points within white pine’s region the site quality has been linked to the soil and also the topographic characteristics of the region. In New England and New York white pine usually grows at elevations between sea level and 1,500 feet however it is sometimes found higher in elevation (Burns, 1990).

The seed production of Eastern White Pine on good years occurs about every 3 to 5 years. Seed production can be hampered by the White Pine Cone Beetle, which can lead to seed production at intervals between 7 and 10 years. The embryo of the seed in white pine may lay dormant and it is quite common. When the seeds germinate they go through the epigeal process, which for white pine does not require bare mineral soil. One pest that may harm seedlings after a harvest is the pales weevil which breeds in the stumps and the slash, the nearby seedlings may become girdled and usually die, most of the damage occurs 3 years after the cutting (Burns, 1990).

After the seeds become established the light intensity becomes very important for the young seedlings. At light between 10 and 13 percent of full sunlight the survival rate of the white pine is usually somewhat poor. When the light is increased to 20 percents the seedling seem to survive but not thrive and it has been determined that 20 percent is the required amount of sunlight for the white pine. As the light intensity increases so
The white pine cannot vegetatively reproduce leaving all of the reproduction up to the germination and the development of the seeds (Burns, 1990).

The rooting form of white pine vary with the soil characteristics, usually the root structure consists of three to five large spreading roots that grow outward and downward which provides plenty of support for the trunk, bowl, and crown of the tree (Burns, 1990).

The white pine is intermediate in shade tolerance and when it comes to vegetative competition. White pine has had good success regenerating in a wide variety of harvest systems. Clearcutting, seed tree, shelterwood, and group selection are all vary good because these systems provide a large amount of sunlight for the regeneration of the seedlings (Burns, 1990).

The white pine may fall victim to a plethora of insects and diseases, there is a total of 277 insects and 110 diseases that are known to attack the white pine. However only 16 insects and 7 diseases may cause significant damage to the tree. The three most important are white pine weevil, white pine blister rust, and *Armillaria mellea*. White pine weevil kills the terminal roots, the tree is seldomly killed by this disease, and the lateral branches of the highest live whorl grow upward and produce new terminal shoots (Burns, 1990).

Within our stand the white pine was present in a even aged plantation, the stand was well stocked to over stocked and when the thinning operation was completed the stand was slightly under stocked which was out objective for the basal area when we
for an even-aged white pine stand.
The cutting plan we did was a free thinning. Mainly we took out of the stand suppressed, low quality and intermediate trees. We believe by cutting these trees this will let the more dominant trees thrive more than they were before, and increase the growth rate. The Ausable Plot, was mainly suppressed and intermediate trees that were not getting the amount of sunlight they needed to be very healthy. After looking back at the past crew prescriptions, we also decided to do a free thinning. The past crew also did a free thinning, and we mainly had to deal with just the trees that weren’t keeping up with the other more mature trees.
We started working on our plot (Ausable Plot) by first marking out the boundaries of the plot with string so we knew exactly what our plot boundaries were. Our next step was to measure every tree with at least a 3.5 in. diameter and mark them with a number, and mark down the crown closure, and the condition of the tree. Then our next step was to go through the trees and figure out what kind of cutting procedure we wanted to use for the plot. After looking at the book from the group that last worked the plot, and the recommendation for the next group to do a free thinning, and that’s what our group decided to do. We then decided what trees we wanted to get rid of in our plot, and the trees we got rid of were mostly the dead, dying, some of the more suppressed trees, and some of the intermediate trees that were in the plot. We went through and marked all of these trees before we started cutting anything down. When we started cutting the trees down, we let them lay on the ground and cut them up so everything would lay flat on the forest ground.
The methods we used for measuring our plot (Ausable Plot) was a Diameter tape. We went back and forth through the plot measuring every tree that had a diameter of at least 3.5 in., and marked every tree with there specific number so we had the tree marked down in our books.
1) A dense stand can be thinned out so the crop trees can survive and thrive in a better condition.

2) White pine is vulnerable to Blister rust.

3) There is a high disease rate in the Adirondacks is a very big concern with the trees.

4) When working a stand with a trail running through it you have to think about aesthetics and the recreational use of the stand.

5) How high density of trees decreases the potential of the growth rate of the trees.
The Ausable Plot is located on old farm land that was purchased by Appollos Smith to operate as a golf course. The land was purchased in 1910 and after that Mr. Smith realized that the land was not adequate to grow enough vegetation that would have been needed to operate the golf course. As a result of this Mr. Smith created an artificial White Pine (Pinus strobus) stand to have some use for the land.

In the 1930's this site was converted and used by the Boy Scouts as a camp, and later donated to the Paul Smith's College for educational purposes. In 1960 this land became a management plan for the Silviculture classes. Because this area has a central location to Route 30 and the logging trails it has the potential for a significant economic gain. Also this area has an aesthetic importance to the public, so that needs to be taken into consideration when developing a management plan, because of the location of the Jackrabbit Trail.
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Before and After
Photographs

This set of photographs show the difference in light and space availability before and after the thinning operation. Both photographs were taken from the middle of the plot.
Before and After
Photographs

Photograph from the tip of the
Jackrabbit Trail facing South East
Prior to thinning

Photograph from the tip of the
Jackrabbit Trail facing South East after thinning
**Before and After Photographs**

Taken before thinning on the South Side of the Jackrabbit Trail

After photograph of the South side of the trail
Before and After
Photographs

Photograph taken from the back
Corner post on the South side, prior
To thinning

Photograph taken from same location
After thinning
Before and After Photographs

View from the Jackrabbit trail prior to cutting. This photo shows the South East direction.

View from the same area prior to cutting, but selected trees have been marked.
Before and After Photographs

This photograph was taken from the North East prior to thinning.

This photograph was taken from the same location after thinning.
Before and After Photographs

This photograph was taken on the North West side of the Jackrabbit Trail prior to thinning.

This photograph is our crew's Final cut on the North West side of the Jackrabbit Trail.
Prescription

It was recommended by the Fox Crew in 1995, the last crew to work the Ausable Plot that every ten years the stand should be thinned to help encourage a well stocked, healthy White Pine (Pinus strobus) stand. By using this method, regeneration is kept to a minimum and the possibility of a harvest for crop tree is significant. After a group discussion we all agree that a thinning method is best for this even aged stand. Taking into consideration that the Jack Rabbit Trail runs directly through the center of our plot we have decided to use a free thinning method with a concentration on low or suppressed trees that are not thriving. Also it is important to note that we will also be removing or harvesting the ugly or dead trees. I think it is important to specify what we as a crew have considered to be an ugly tree. Unacceptable growing stock is a rather subjective term, we define it as a tree or series of trees that have bad form or are in an unhealthy condition. On the removal of the intermediate trees we will be removing trees with poor form, vigor and low LCR. It is our goal to also incorporate both dominant and co-dominant trees in the harvest. When doing this thinning process it is our intention to not create any large gaps that may allow for regeneration. This will reduce the amount of competition for sunlight, nutrients and growing space. Today there is high competition and little growing space for dominant and co-dominant trees to expand within the stand. If we were to remove the suppressed, dead or dying along with the ugly trees there would be an increase in growing space for the stronger tress to thrive. With the removal of a selected
number of dominant or co-dominant trees there will be an increase of light availability for those trees that remain in an intermediate position. There are some trees that only require a bit of pruning to the limbs. In the areas located on the trail barriers will be developed to prevent the public from future timber harvest, this is where pruning can be a valuable asset. This area would be no greater than 10 feet from the trail, in hopes that the healthy trees will remain. By doing this you can reduce risk of injury to the public, prevent disease and improve the aesthetics to the area. Pathogens like White Pine Weevil and Blister Rust can be kept to a minimum if pruned properly. The goal of our prescription is to use the stand in an environmentally friendly way by enhancing the aesthetics for the public to enjoy while partaking in the Jack Rabbit Trail. There is also future use of this site for a possible harvest for crop trees.

**Our plan has several different parts:**

1. Remove most of the dead, dying, suppressed or ugly trees.

2. To increase the amount of growing space for the remaining trees. The trees that will remain will be in a dominant and co-dominant position and will have an aesthetic value to the Jack Rabbit Trail. This is important to the public as well as our group members.

3. There will be trees that may just require pruning and will not be removed from the plot. This will also increase the aesthetics of the area and lower the number of acceptable trees that require harvesting.
Recapitulation

When the Ausable Plot was initially planted in 1910, it was referred to as the Spahn Plot. When the plot was established it had 526 stems.

The Hayes crew worked the Ausable Plot in 1965, at that point in time there were 342 stems, with the average DBH of 8.8. The Hayes crew wanted to generate attention to the advanced crop trees so they decided to perform a low crown thinning.

The Speed crew in 1970 then worked the Ausable Plot. Within the plot the average DBH had increased to 9.4. The Speed crew decided to perform another crown thinning.

1975 the Taradyn crew worked the Ausable Plot again, this plot was being tended to on a 5 year rotation, so it was decided to do yet another crown thinning.

In 1980 the Bell Crew worked the Ausable Plot and created a shelter wood system.

No information was found on average DBH size for this crew also no information is available for the Ausable Plot until 1994.

In 1994 the Caruso crew had two goals and objectives, one of which was to perform a crown thinning for all the harvestable material and to do an extensive amount of pruning. It is there goal to create a stand of White Pines that can be produce a good crop tree for harvest.
Recommendation

It is the recommendation of the Dean crew that the next crew attempt another thinning, to allow for crop tree harvest in another 10 years or so. The Ausable Plot has potential for a significant finical reward if the trees are tended to. It is our suggestion that a free thinning should be used to increase the growth capacity. By removing dead, dying or suppressed trees there is the ability for the stronger trees to thrive. Also it is our recommendation that downed debris should be left for decomposition and wildlife habitat. As an end result we would like to see this artificial White Pine stand be harvested.