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Friends of White's Woods, Inc.
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June 24, 2020

Dear Andy and Christina,

Thank you for the tour of White's Woods last Tuesday, June 16th. As you know, we had great weather and were able to walk most of the property. According to my "track," we walked 4.77 miles in White's Woods and reviewed every segment of the forest. Along the way we encountered many hikers, bikers, and even a mama bear and her two cubs. The forest is unique in many ways and it is easy to see why the property attracts so many recreationists on a daily basis.

Your organization has asked me to review current and past documents related to White's Woods as well as to provide a general assessment/opinion of the forest resource and property. I have broken the assessment into the following categories: Overall Impression, Overstory, Understory, Sustainability, and Recommendations.

Overall Impression

White's Woods is a 245 acre beautiful forest with only minor intrusions from a powerline and some shallow gas production. The property has limited vehicle access, but has substantial access for hiking and biking. The property is mainly used for recreation and has many daily recreational users on its vast internal trail system. Signs are posted naming the property "White's Woods Recreation Area" and listing hours for the "Park." There are 12 named trails (totaling over 5 miles in length) listed on a welcome sign at the 12th Street trailhead. The trails are well-designed and provide excellent recreational access to the whole property.

White's Woods forest is as beautiful as any I've seen in my career. The aesthetic value of the property is very high. Hikers and bikers experience large, beautiful trees along every path. The site/soil is obviously very productive for growing quality trees and the growth of the trees (both height and diameter) is impressive. It is easy to see why so many users and residents have a high degree of passion for White's Woods.

Forest Overstory

The overstory is the highest layer of vegetation in a forest. At White's Woods, the overstory is made up of trees that have formed a vegetative canopy over all other vegetation layers. In any forest, there are overstory (tallest), and understory (ground-level) layers of vegetation. All trees that have been measured by previous foresters (1995, 2007, and 2019) for volume and value estimations are part of the overstory of White's Woods.

According to the 2007 Forest Stewardship and Management Plan, authored by professional forester David J. Babyak of Indiana, "Most of the forest has developed on units that are abandoned farmland or previously harvested woodland." Also, according to Richard S. Stephenson, naturalist and historian, in his 1980 *Human History of White's Woods*, "White's Woods has been logged at least twice since the early settlers. Some areas in the woods were logged as recently as the 1940's and early 1950's." In a recent interview with The Hawkeye, professional forester David J. Babyak said, "White's Woods is an even-aged forest, for the most part. It was clear-cut. Walter Schroth told me his father clear-cut the forest in the 1950's."

When a forester inspects a forest, it is always important to gain knowledge about the forest's past logging history and to determine an approximate age of the forest. I reviewed historic aerial photos of White's Woods from 1939, 1957, and 1967. In the photos, it is easy to see evidence of abandoned old field as well as timber harvesting across the bulk of the property. I agree with Mr. Babyak that we are dealing with an even-aged forest and for now, I am using an average age estimate of the forest at approximately 70-80 years. Typically, trees don't grow to the size of the trees in White's Woods in only 70 or 80 years, but this indicates a very productive soil and nutrient component. An agricultural analogy would be that corn grows much faster and taller on a good site than it would on a poor site.

Because White's Woods is considered an even-aged forest (either grew from an abandoned field or as the result of a heavy timber harvest in the past), the large trees are not older than the small trees. In fact, the large trees are a very similar age to the small trees. The small trees were out-competed by the larger trees and were, in many cases, just barely able to survive. Through fierce competition, the larger trees were able to fight for a place in the forest canopy and the smaller trees were forced to hang back, grow slower, and accept an inferior position of only collecting filtered light. In this way, White's Woods is not unlike over 90% of Pennsylvania's forests. Most of our PA forests were clearcut between 1880 and 1930 and grew back as even-aged forests.

White's Woods overstory is healthy. As previously stated, the site is very good for growing high quality trees. There have been plenty of previous listings of species, board foot volumes, and timber values for White's Woods overstory, so there is no need to present that information here. However, it should be stated that the overstory is in very good (way above average) condition in terms of health and that the overstory of White's Woods is NOT over mature. Just because the trees are big, does not mean they are over mature or that there is need to harvest timber in order to save the forest. I would whole-heartedly disagree with anyone who would state this. In fact, due to the great growing conditions and overall health of the overstory, I would suggest that White's Woods is actually a long way from being over mature or in need of a near-term harvest. 80 Year old timber is basically in its prime. Of course, someone who wants to profit from harvesting the trees would certainly lick their lips at an opportunity to harvest and sell 80 year old, high quality timber, but the reality is White's Woods overstory is in its prime.

Forest Understory

The ground level vegetation in White's Woods is in very poor shape. Even though thousands of large trees are annually producing millions of seeds, it is almost impossible to find tree seedlings in the understory. What we do see in the understory are non-native invasive plants such as Japanese barberry, Japanese stiltgrass, bush honeysuckle, autumn olive, multiflora rose, and garlic mustard. It is also easy to find native competing vegetation such as spicebush and hayscented fern. The bulk of the forest floor has evidence of invasive and competing plants. There are also some small sections where the forest floor appears bare. None of this is good.

If given enough experience, it is easy for a forest manager to determine the culprit and to put blame where it is needed. There is nothing wrong with the tree seeds and there is nothing wrong with the soil. The culprit is deer. Deer have taste preferences. They like to eat the type of vegetation we typically want to grow and they do not eat the invasive and competing plants. The average deer requires 5 pounds of desirable hardwood buds per day during all months outside the growing season. So, from October through April, every year, each deer spends its days meandering the forest looking for its 5 pounds of desirable hardwood buds. As previously stated, there are basically zero desirable tree seedlings in White's Woods. This makes easy pickings for any deer that spends time on the property to find each and every germinated bud (fall or spring) on the property. The seedlings are gone before they ever get a chance to grow. I know I will meet with skepticism on this from the general public. Of course, in PA, the deer impact on our forests has been a hot topic of debate for decades. However, my statements are provable. Give me a few years and allow me to build a small deer exclosure and the evidence will be indisputable in a short matter of time. There is nothing wrong with the millions of seeds and there is nothing wrong with the soil.

The understory of a forest plays a vital role in forest health. If there are any impacts to the forest overstory, such as harvesting, ice damage, wind damage, insects, or disease the health of the understory will determine future forest health. Ideally, in a healthy forest system, there should be ample tree seedlings produced from overstory seed production and germination. Contrary to popular belief, tree seeds do not need added light to germinate and tree seedlings do not need added light to begin growing. In fact, the best understory condition would be to have tens of thousands of seedlings of desirable species "at the ready" in case of and in preparation for an overstory impact of some kind. If the forest understory and the deer impacts were not out of balance, there would be enough seedlings to feed deer and to be in place to become the next forest, following an overstory impact. In addition to many healthy seedlings, a forest understory should also have a wide range of forbs, wildflowers, and shrubs that are native to the area. Seeing only undesirable invasive and competing plants, or no vegetation at all is definitely cause for alarm.

Sustainability and Management Challenges

There are many resources and academic studies that discuss sustainable forest management. In brief, they can be boiled down to a simple premise…the forest should be able to grow back a similar or improved variety of species to a similar or improved quality following an overstory impact. Whether the overstory

impact is planned, as in proper harvesting, or in the case of an unplanned event like wind, insect, or disease, a sustainable outcome is one where the forest grows back in at least as good if not better condition. Tragically, most timber harvests in PA can be labeled unsustainable. The reality is, a sustainable outcome is extremely difficult to achieve. There are many impediments along the way to a sustainable outcome, such as hungry deer, invasive plants, competing plants, improper harvesting, improper planning, improper use of added light, etc. The days of thinking "we just have to add light to get things growing in the understory" are gone. There are way too many challenges today. In fact, if you want to know exactly what will grow back after a timber harvest it is quite simple – just look at what is on the forest floor before the harvest and you can know for sure. If there are invasives, you will grow invasives. If there are competing plants, you will grow competing plants. If there is nothing, you will make the perfect environment for increased invasives. Even if you kill all the invasive and competing plants first, you should definitely not add any light until you have an abundance of desirable, protected seedlings in place. The reason is simple…the invasives will come back much faster than any desirable native plant that is a target for deer.

To truly practice sustainable forestry today, there is no simple one, two, or three step process. Also, a sustainable outcome requires a substantial investment of time and money. There are costs for experienced professional foresters, costs for managing deer impacts, costs for managing competing plants, and costs associated with harvests and harvest planning. Responsible landowners are aware of these facts. However, most landowners do not understand or value the investment of time. There would be no way to ensure sustainability in a proposed regeneration harvest that would all be accomplished in a 5 year period. In fact, a sustainable outcome actually takes 10-15 years at least. A sustainable outcome can be achieved, but the regular underestimation (of time and money) on the part of landowners and their managers has made sustainable outcomes rare.

Recommendations

The situation at White's Woods is interesting to say the least. After reviewing many relevant documents, it is obvious that there are many folks on both sides of the issues that care about the property and the forest. The property, its location, and its usage is quite unique and special. There is passion on both sides and there is obvious friction. The current proposal for a regeneration harvest (shelterwood harvest), beginning with a 50 acre area in the center of the property, is probably the last thing that would resolve the friction. Any regeneration harvest on a property like White's Woods will be viewed as extreme. Also, with the proposed process, the outcome will not be a good one for the forest. Believing the forest is over mature, the forest floor is "stagnant" and a regeneration harvest is the only hope for a bright future for White's Woods, is completely misguided. The fact is, White's Woods is only 70-80 years old, in its prime, and has a very healthy overstory. Of course, as mentioned, the understory condition is appalling and much work can and should be done to improve it which will greatly improve the overall health of the whole forest system.

If I were managing this property, I would manage it as it is…like a park. Parks are not industrial forests. Parks can be and should be treated differently. Traditional forest management techniques should be

tweaked to meet the needs of the landowner, improve the forest, and consider all the users as well. Often, situations like this require a great degree of creativity. I realize the landowner would benefit from adding timber sale income to their budget. I also realize doing this improperly, as proposed, would forever change the forest. I also realize that the majority of Indiana's residents and users of the park would prefer the landowner and a manager to consider values beyond just timber income. How will a substantial timber harvest affect aesthetic values, recreational values, and surrounding property values? I would take a creative approach and present the landowner with options that delay harvesting while still allowing for some revenue generation from the property. My "plan A" would be to attract an organization that would be interested in paying the landowner for use of the forest as a carbon sink. White's Woods is a high volume, high production forest that annually absorbs an abundance of carbon dioxide from the air, producing an abundance of oxygen in the process. Do you realize Indiana, PA is a healthier place to live because of White's Woods? Emission offsets and carbon sinks are in the headlines across the world and many large companies have shown great capacity to invest in these projects. There are conservation organizations currently involved in plans to bring together multiple small landowners for carbon projects that pay out. Ideally, the landowner could be paid for just growing trees and maintaining forest health. There are other ways to be creative as well. Would residents be willing to pay for timber rights over time? Would a conservation organization be willing to pay for a conservation easement? Many such easements still allow for forest management and can be very practical. Would the landowner allow a regeneration study to include erecting a small educational deer exclosure? This would go a long way to proving how the system really works and what to blame for the current issues.

Of course, my "plan A" as well as other creative ideas would take some time to develop. Fortunately, there is no need to rush with White's Woods. Afterall, we are dealing with a forest that is approximately 70-80 years old. Many state forest agencies, even if managing timber with industrial forest techniques, would not consider an 80 year old forest to be over mature or in desperate need of management. The reality is White's Woods will outlive all of us, even if we take a do-nothing approach. Time is definitely on our side.

Thank you for the opportunity to share my thoughts on this great forest property. Feel free to call me (814) 659-1280 or email me mike.wolf.afc@gmail.com anytime to discuss this report.

Sincerely,

Michael T. Wolf
Forester