



RECOMMENDATIONS FOR GRAFTON TOWN PARK AND FOREST

MAY, 2017

After visiting the 55.9 acre parcel owned by the town of Grafton multiple times with the objective of identifying forest management priorities, I have come up with the following list of items. Some are more pressing than others as will be indicated. Some recommendations digress from forest management per se, and are more geared towards maintenance and improvement of the parcel in general, and in regard to its multiple uses as a recreational area, natural landscape, and public asset. The list is categorized in three sections; first will be matters of high priority, second will be matters of medium priority, and lastly will be matters of lower priority and non-forestry-related recommendations.

1: High priority

-Two species of invasive plants were identified along the edge of the mowed area and extending into the woods from that point.

Japanese barberry is a low bush with sharp thorns and seasonal red berries. The plant is invasive and exotic, as the name suggests. It is favored by birds and wildlife that prefer the sweet fleshy berries as a food source. It leafs out before native plants, and holds its leaves longer in the fall than do native plants giving it a distinct advantage over native plants. It has a tendency to spread and displace native vegetation. It has also been recognized to harbor a higher black-legged tick population underneath its leaves than other low-growing plants.

Glossy buckthorn has become well established. This invasive and non-native plant grows as tall as 16 feet in height, and has similar growth characteristics to the above mentioned barberry. It is a vigorous stump-sprouter, and can become an immense problem in the understory of a forest and even in mowed areas. When it is cut and not treated with herbicide, it will sprout multiple stems from a single origin and compound the problem. Excavation of roots is another method of removal.

It is recommended that both invasive species be eradicated from the property in the near term.

-In the northeast corner of the property at the origin of the trail system there is a 2-age forest structure. The younger class consists of wild apples, yellow birch, white ash, sugar maple, red oak, black cherry, and other hardwood species that are around 20-40 years in age and in the large-sapling and small pole-size class. The older class consists of white pine around 100-120 years in age. The pines likely became established following agricultural abandonment. Their "bushy" growth characteristics suggest that they seeded into an open field, initially had an abundance of sunlight, may have been browsed early on by livestock, and certainly were targeted by white pine weevil insects throughout their first 60 years of growth.

At this point in time, many of the pines have begun to decline in health, and half a dozen or more have died, though they remain upright. White pine is not as long-lived a species as is hemlock, or some hardwood species. 100 years is often recognized as maturity. I observed a few of the living pines with unusually thin crowns, which could be a result of *Caliciopsis pinea*; a white pine canker disease that will further increase the rate of decline. Many of the pines have begun to "self-prune", and shed heavy limbs onto the ground and onto the recreational trail system.

I highly recommend that all of the over-mature white pine trees that are both within reach of the trails, and are inhibiting the growth of the diverse younger age class of trees, be felled. This will mitigate the imminent hazard of pines falling, breaking, and shedding limbs onto areas of public traffic. In addition, it will release the young hardwoods and apple trees and increase their growth rates.

It will, however, present the challenge of what to do with the large downed trees, which have no value as timber. I see three options: 1) leave the "Coarse Woody Debris" (CWD) lying where it falls. This will look unsightly in some people's opinion and will take many years to break down and decompose. It will, however, be a terrific habitat for micro-organisms, insects, mosses, lichens, etc. 2) using heavy equipment, consolidate the debris to one or two locations on the property. Or 3), using heavy equipment and a log-truck or dump-truck, remove the debris to an off-site location such as the town stump dump.

Waiting until the trees die before they are removed is not recommended. The risk of felling a dead tree is far greater than the risk of felling a live tree which has some level of predictability to the chainsaw operator.

There would be an immediate replacement for the loss of pines in the young hardwoods which have become established in the understory/ midstory. The area would continue to have a forested appearance. This change would also showcase and accentuate the natural transition from mowed land, into young forest, and then into mature forest, which could be an educational tool for the nature museum and the elementary school.

2: Medium Priority

-The apple trees should not only be released (remove the competing vegetation around and above them, most notably the white pines mentioned above), they should also be pruned. Pruning would remove dead branches, and begin to slowly sculpt the branches into a lower and therefore more productive tree. More flowers would serve pollinators and more fruit would serve a variety of wildlife species. They would also be aesthetically pleasing as a transition from the mowed area into the forested area.

-There are two hemlocks in the mowed area that are in poor health. The larger of the two has lost some of its top. They both provide a significant amount of shade which in turn negatively affects the growth of the park grass. Removing both trees would be an improvement. Furthermore, there are half a dozen or so other stumps within the mowed area that could be removed for ease of mowing and maintenance. The removal of the hemlocks may improve drainage which is noticeably poor.

-Within the forest on the red trail there continues to be a two-age forest structure with mature pines and younger hardwoods. Many of the pines pose no immediate risk to trail users. They would, however, benefit from some light thinning. The thinning could result in extraction of income-generating sawlogs.

-Some of the dead and dying pines on the red trail are far enough away from the trail that they pose no risk. These could be left as "snags"; trees that are used as perches, nests, and habitat by birds and small mammals.

-One technique for increasing line of sight into the forested landscape from the trails could include understory management. In particular, cutting beech and striped maple saplings would complete this objective. Furthermore, it would work to increase diversity of woody species, as beech and striped maple often dominate the understory and outweigh other species of saplings and seedlings.

-Along the northern property boundary there is a broad area of young hardwoods, dominated by sugar maple pole-sized trees. The area would greatly benefit from Timber Stand Improvement (TSI) wherein trees would be selected for long-term growth, and subsequently released by cutting or girdling those around them in direct competition. This would provide adequate spacing to increase the rate of growth of those selected for long-term management.

3: Lower priority

-In terms of trail maintenance, I can recommend a few areas of improvement. Trimming brush and branches along the edges of the trails would be an improvement, as would cutting and removing logs and sticks that have fallen across the trail. Raking or leaf-blowing the trails twice a year would help to clearly define them, would allow for safer passage, and would potentially reduce the risk of ticks if that is a concern.

Grafton ponds could potentially be approached to help with trail maintenance, as the layout of the trails lends itself well to mountain biking.

-In hardwood-dominated sections of the forest, the only immediate risk is in the form of dead and dying white birch trees along the trails. Birch is a short-lived species and already at about 60 years in age most of the birch trees have begun to deteriorate and shed branches and rotten sections of stem.

There is also opportunity to thin the hardwood sections to improve the health of the residual trees. Included in the thinning would be removing ash trees in anticipation of the Emerald Ash Borer insect, which is predicted to arrive in Vermont within the next 5-10 years and begin killing ash trees. Also included would be removing maples with maple borer damage insect, and other poorly formed trees.

-Side-trails and short detours could be added to the trail system to showcase areas of interest including large trees, unusual species, rock outcroppings and geological features.

-The picnic area could be improved upon in a few ways. One would be to enhance the view to the east by cutting a group of trees below the picnic plateau.

There are a few dead white birch trees hanging over the area that should be removed to reduce hazard of falling. The picnic table and benches are rotten and should be replaced.

-There are 2 gazebos on the red trail, both of which have begun to deteriorate. Cutting a few trees to provide more light onto the structures would be an improvement and would reduce the rate of decline in the form of rot etc. The structures should be repaired or replaced.

-The trail system does not reach throughout the entire property. This gives the option of either expanding the trail system and/or allowing for more intensive forest management in areas not included in the "park", per se. Forest management would also create new trails as a by-product; skid trails and woods roads could be adopted as hiking trails etc. following a harvest.

-Trail access from the fire pond does exist, but could be improved and promoted as a secondary origin of access to the trail network.

-I seem to remember a link from the red trail to target rock when I was younger. This link does not appear to exist or at least is not clear at this point in time. A dialogue could be opened up with the Vogel family, who own and maintain the hiking destination, to re-establish a clear trail from the park to target rock.