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ACTON CONSERVATION COMMISSION
PRELIMINARY FOREST INVENTORY RESULTS
WETHERBEE LAND

The Wetherbee Land is located on Wetherbee Street and Route 2. It consists of 72.68 acres. The front 31.68 acres is active agricultural field, while the remainder of the property is forested. All of the forested areas appear to have developed on abandoned fields or pasture. Most portions of the forested areas are fully wooded, with the exception of some small brushy areas in Stand 3. In addition, there is a small area, Stand 5, that is only in the early stages of reversion to forest.

A forest inventory was conducted in June 2010. Sample plots were established using a grid system, with plots being established every 150 feet along transects that were 300 feet apart. At each sample plot the tree characteristics were measured. In addition, a visual estimate of understory and herbaceous cover was made. In addition, significant site features were mapped. These features include forest stand boundaries, wetlands, stone walls, trail and vernal pools.

Based on discussions with the Commission, the inventory data will be used to develop a forest management plan for the property. Potential forest management activities could include wildlife habitat management, invasive species control, trail maintenance/establishment, boundary line maintenance and timber harvesting.

An initial recommendation that the Commission should consider is to have a forest management plan developed for all of the properties under its control. In order to develop a comprehensive management approach, that can meet many different objectives, it is critical that there is a complete understanding of conditions on all related properties. To accomplish this it is recommended that applications be filed with the Forest Stewardship Program to obtain funding for the development of plans for all of the Commission's properties. Funding is available from the Forest Stewardship Program that would cover the majority of the cost of conducting forest inventories and developing management plans.

Overall Forest Conditions:

The forests on the Wetherbee land are generally well-stocked with trees. It appears that many of the trees developed in relatively open conditions following the abandonment of fields. As a result many of the trees are quite poorly formed, greatly reducing their potential for timber. Also likely due in part to the past agricultural use of the area, there is a large number of non-native, invasive species present, especially glossy buckthorn. The control of invasive species should be a consideration in any management plan that is developed. The forests support good conditions for a wide variety of wildlife species, however, the habitat diversity on the site is not high.

The only area of extensive wetlands on the site is on the southeast portion of the property near the field and Route 2. This area is a wooded wetland that also contains many small mounds dominated by species more typically found in uplands. There is at least one probable vernal pool located in this

wetland system. In addition, there is a very small depression, likely man-made, near the southwest corner of the site that appears to function as a vernal pool. The productivity of both of the possible vernal pools may be impacted by their proximity to Route 2.

There is an extensive trail system on the property. It appears to get moderate use for hiking.

Stand Descriptions:

Stand 1:

Stand 1 is a mixed stand dominated by white pine, white oak, red maple and scarlet oak. The stand is 21.9 acres in size, has a basal area of 137 square feet per acre and an average diameter of 12.1 inches. The volume of timber in the stand is 4700 board feet per acre, 7.9 cords per acre of cordwood and 4.4 cords per acres of pulpwood. The stand's understory cover is 38% and is dominated by glossy buckthorn, red maple saplings and white pine saplings. Pennsylvania sedge and lowbush blueberry are the most abundant groundcover species. Groundcover is 36%.

Stand 1 is well-suited for a variety of management activities, depending on the goals and objectives that are developed.

Stand 2:

Stand 2 is a mixed oak stand dominated by scarlet, white, red and black oaks. The stand is 7.0 acres in size. It has a basal area of 115 square feet per acre and an average diameter of 10.5 inches. The volume of timber in Stand 2 is 3500 board feet per acre and 13.7 cords of cordwood per acre. The understory in Stand 2 provides 16% cover, while there is 34% cover in the groundcover stratum. White pine and red maple saplings are the predominant understory species. The dominant groundcover species are huckleberry, lowbush blueberry, white oak seedlings and Canada mayflower.

Stand 2 is also well-suited for a variety of management activities, depending on the goals and objectives that are developed.

Stand 3:

Stand 3 is an immature stand that still contains many areas dominated by shrubs. Invasive species are especially prevalent in the stand. Red maple, white oak, bigtooth and quaking aspens and white pine are the dominant tree species. The stand's basal area is 120 square feet per acre and the average tree diameter is 4.6 inches. Stand 3 contains 700 board feet per acre and 9 cords per acre of cordwood. Understory cover is 70% and is dominated by glossy buckthorn, white pine saplings and scrub oak. Groundcover is 45%. The most abundant groundcover species are Pennsylvania sedge and lowbush blueberry.

The quality of the trees in Stand 3 is very low. Under many management scenarios it would be recommended to harvest many of the trees in order to initiate new regeneration. The regeneration would likely result in better quality trees as they would develop under forest conditions. In this instance, intensive forest management could be counter-productive due to the prevalence of invasive species. The control of invasive species will likely be a priority for the management of Stand 3.

Stand 4:

Stand 4 is the most mature forest on the property. Much of the stand is wooded wetland, however, there are some large areas of upland forest as well. The stand contains several widely scattered trees of very large size. Red maple, black oak, white oak and scarlet oak are the most common tree species. The stand has a basal area of 116 square feet per acre and an average diameter of 12.8 inches. The stand contains 5200 board feet per acres and 6.4 cords of cordwood per acre. The stand's understory cover is 42% and is dominated by glossy buckthorn and highbush blueberry. Cover in the groundcover stratum is 90%. Cinnamon fern, Pennsylvania sedge, skunk cabbage and lady fern are the most abundant groundcover species.

The upland portions of Stand 4 are well-suited for a variety of management activities. Within the wetter portions of the stand management would have to be significantly less intense.

Stand 5:

Stand 5 is a small abandoned field that is starting to revert to forest. It contains scattered apple trees and patches of saplings of several species. The remainder of the area is vegetated by grasses, predominantly fescue, goldenrods, milkweed and other herbaceous species.