

Massachusetts Deer Browse Impact Survey

Property Name: Williams Pond Conservation Area Town(s): Harvard

Ownership: Harvard

General Surroundings: Rural/Forest/Ag **Low-residential** Med-residential High-residential

General level of use by public: Low **Moderate** Heavy Unknown

Is this property open to hunting? Yes **No** Unknown Special Hunting Restrictions:

General level of nearby hunting? **None** Limited Moderate Heavy Unknown

Date of site visit: 5/21/19 Name(s) conducting survey: Siener

Description of the forest on the property: (e.g., conifer, mixed conifer/ hardwood, hardwood dominated; what are the dominant trees in the forest canopy; is it closed or open, is the forest older- or younger-aged, is there active logging, etc):

Mature, closed canopy forest predominantly composed of white pine with some areas mixed with oak and birch. No logging. Red maple swamps also present.

Survey Instructions: Using the worksheet on the back, walk through a representative area (10-50%) of the forest to come up with an average level of impact on a property. Avoid areas near trails and roads as these are not representative. Pay special attention to what is able to grow and which tree species are being browsed, especially in canopy gaps (e.g., areas where the sun is able to reach the forest floor from fallen trees, recent cuts, etc.). Take pictures showing the forest floor as well as specific cases of browsing, if present. Please also record a GPS track or attach a map of the property with areas surveyed marked (e.g., if random plots used). After filling out the back, check the box below that best describes the general level of forest impacts from deer browsing. Please email a copy of the survey, GPS track/map, and pictures to david.stainbrook@state.ma.us.

General level of forest impacts from deer browsing on the property (check one):

☐ **1: Little to No Impact**

Preferred hardwood tree seedlings and saplings such as maple, oak, ash, and hickory are growing up to and above 6 feet tall, with little to no sign of browsing. The shrub and herbaceous layers are well developed and show little to no impact (e.g., Pink Lady's Slipper, Trilliums, and Wild Sarsaparilla are present)

☐ **2: Between Little to No Impact and Moderately Impacted**

☐ **3: Moderately Impacted**

Preferred hardwood tree seedlings and saplings such as maple, oak, ash, and hickory are growing up to and above 6 feet tall, but most do show some signs of browsing. Some moderately preferred trees (e.g., cherry) may show slight browsing, but no sign of browsing on low-preference tree species such as American beech and white pine. Some preferred to moderately preferred shrubs show evidence of browsing (e.g., viburnums) and preferred herbaceous plants (e.g., Trilliums, Pink Lady's Slipper, Canada Mayflower, and Wild Sarsaparilla) are present, but show some signs of flowering parts removed.

☐ **4: Between Moderately Impacted and Impacted**

☐ **5: Impacted**

Preferred hardwood tree seedlings and saplings such as maple, oak, and ash are not common, and when present, show signs of moderate to heavy browsing. In their place are other tree species such as American beech, white pine, cherry, birch, etc., which may show evidence of browsing. Some low-preference shrubs show evidence of browsing (e.g., blueberry, Glossy Buckthorn). Few preferred shrubs may be found scattered in the understory and Hay-scented Fern, low-bush blueberry, huckleberry, grasses/sedges, and barberry may dominate large sections of the forest floor.

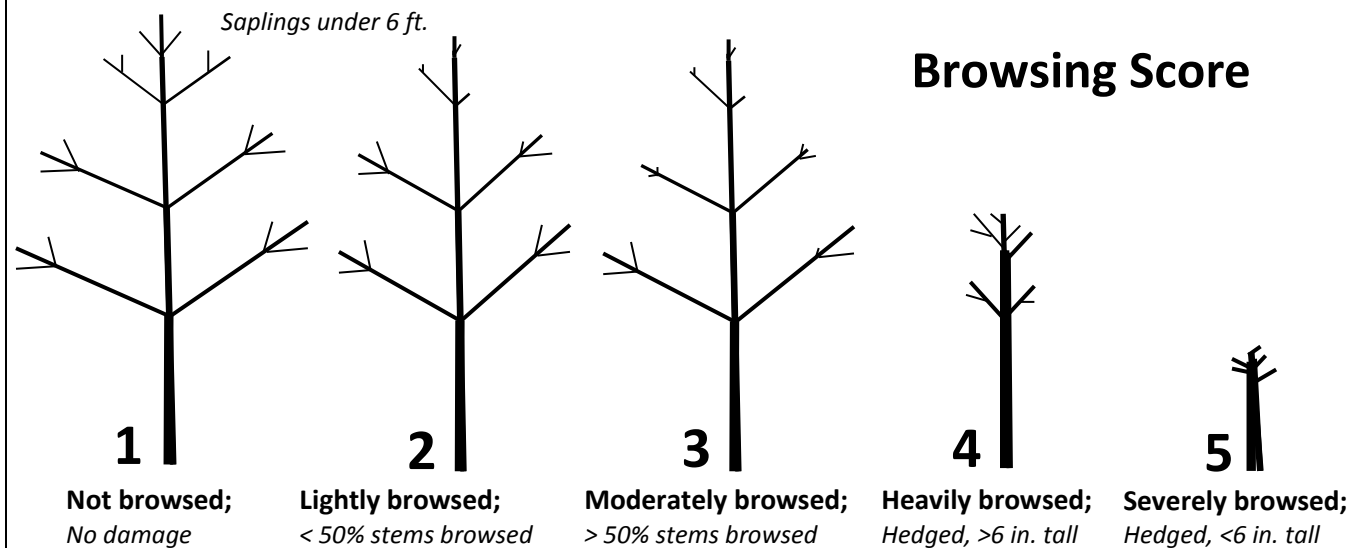
☐ **6: Between Impacted and Heavily Impacted**

☐ **7: Heavily Impacted**

Tree seedlings and saplings preferred by deer are almost non-existent, and when present show signs of heavy browsing. Less preferred shrubs and trees show signs of browsing and/or most saplings are unable to grow above 6ft. Low preference trees, such as white pine may show evidence of browsing. A browse line is often visible below 6ft. Foliage of native shrubs and wildflowers are very limited. Ferns, grasses/sedges, and non-preferred invasive plants such as barberry may dominate the forest floor.

Classify average level of browsing on seedlings/saplings for the following species (minimum 20 stems):

Oak	1	2	3	4	5	Present in canopy, few in understory	Not Present/Seen
Red/Sugar Maple	1	2	3	4	5	Present in canopy, few in understory	Not Present/Seen
Eastern Hemlock	1	2	3	4	5	Present in canopy, few in understory	Not Present/Seen
Birch	1	2	3	4	5	Present in canopy, few in understory	Not Present/Seen
American Beech	1	2	3	4	5	Present in canopy, few in understory	Not Present/Seen
Black Cherry	1	2	3	4	5	Present in canopy, few in understory	Not Present/Seen
White Pine	1	2	3	4	5	Present in canopy, few in understory	Not Present/Seen
Other: <u>Witch hazel</u>	1	2	3	4	5	Present in canopy, few in understory	Not Present/Seen



General level of deer sign on the property (e.g., scat, tracks, etc.): **Low** Medium High Unknown

Is there any evidence of deer impacts in surrounding areas (e.g., homes with landscaping damage)?

None **Very Limited** Moderate Heavy Unknown

Additional Notes (e.g., describe herbaceous and shrub layer):

Browsing on oak, maple, ash, hickory present, but impact low-moderate. Ash and maple growing out of reach of deer in some areas. Winterberry and spicebush shrubs browsed, but usually not significantly. Some witch hazel browsed as well, but low impact. Not many small hemlocks present, but did not notice any clear signs of browse. Impacts to regenerating trees and stump sprouts appeared greater near road and fields. No clear browse line in field. Herbaceous layer largely composed of mixed fern species, dense Canada mayflower, starflower, sarsparilla, poison ivy. Other areas with solomons seals, white wood aster, lady slipper and trilliums. Only one example of bracken fern browsed.

MAP OF SURVEYED AREA – access at intersection of Stow Road and Murray Lane



IMAGES



White pine section of forest dominated by bracken fern, Pennsylvania sedge and Canada mayflower



Mixed forest with sparse saplings and dense Canada mayflower and starflower ground cover



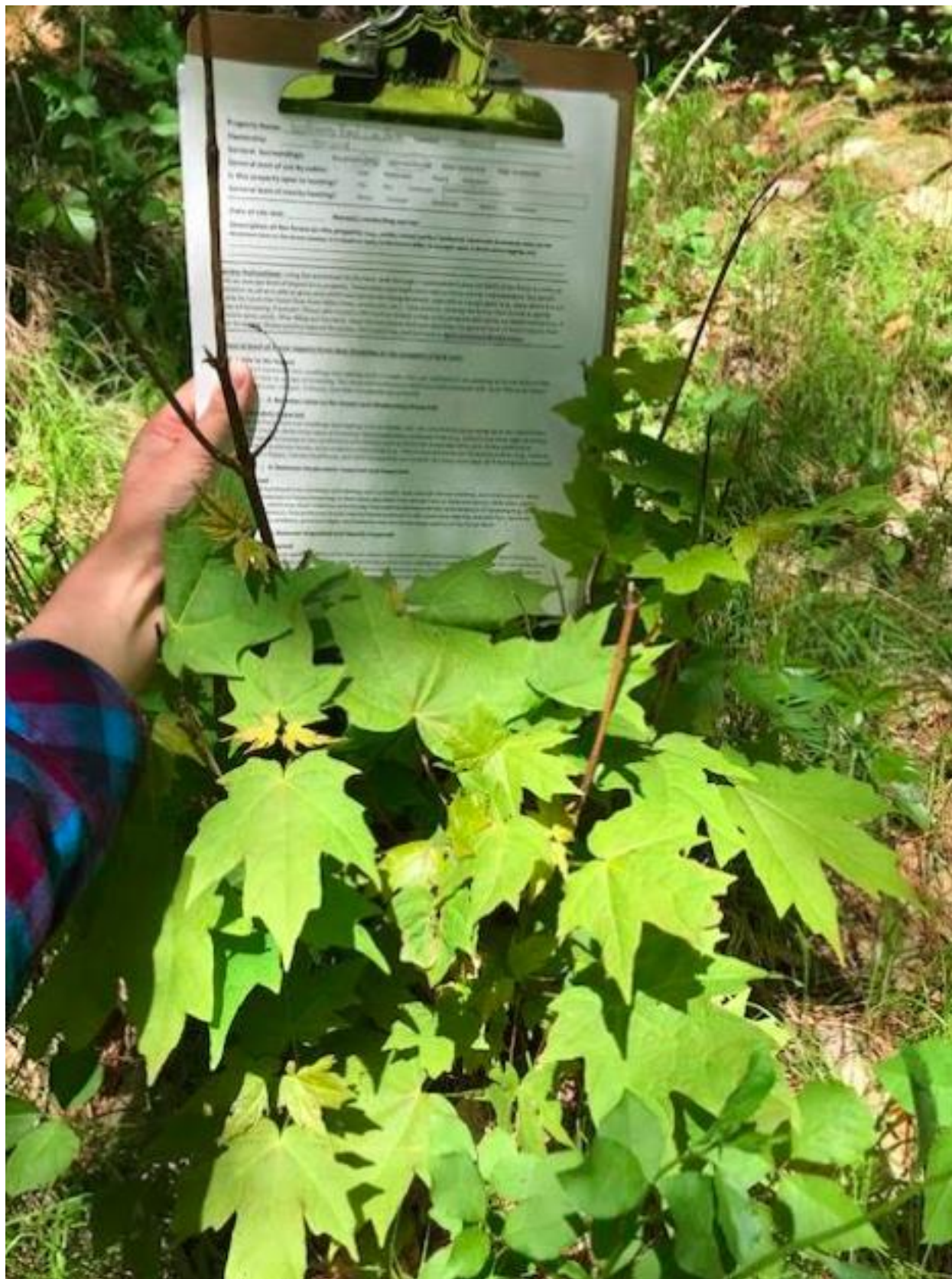
More deciduous section of forest with Christmas fern and other fern species mixed with Pennsylvania sedge and flowering ground plants.



The sapling layer was well-defined in some sections of forest where the canopy opened.



White oak stump sprout browse (browsing score 2, on average, though this photo is 3-4). Impacts to vegetation were greater by the fields and roads. Most oak regeneration in the forest was only lightly browsed.



Browsed sugar maple near the road. Again, browsing was not as severe in the interior of the forest.



Euonymus uncommon in the forest, but always browsed (score 2) when present.



Witch hazel was lightly browsed in the forest (score 2)



Mix of fern species, trillium and other native herbs on the forest floor.



Dense growth of Canada mayflower on the forest floor. Flowers present, most not yet in bloom. No signs of browse.