

Hillside Woods Forest Inventory & Management Plan

Public Meeting Thursday, October 4th @ 7pm, Community Center, Hastings-On-Hudson

Outline

Who We Are LBS Ecological specializes in Ecological Planning & Design. Our team includes:

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| <i>Miguel Berrios</i> , MLA, LEED AP, ISA Arborist Principal, Ecological Landscape Designer miguel@landbeyondthesea.com www.landbeyondthesea.com | <i>Sarah Kelsen</i> , Principal, Ecological Engineer <i>Lance Ebel</i> , Forester & Wildlife Management <i>Artem Treyger</i> , Forester & ISA Arborist |
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DEC Community Forestry Program NYS Urban & Community Forestry Program is a partnership between DEC forestry professionals, public and private individuals, and volunteer organizations. It supports communities in comprehensive planning, management, and education to create healthy urban and community forests which enhance the quality of life for residents. The Hillside Woods Forest Inventory & Management Plan is grant-funded through this program.

Hillside Woods & Park Brief description of the Forest and Natural Resources.

State of the Woods Forums with expert naturalists and guided walks in Hillside Woods revealed that there is a dire need to restore the ecology of Hillside Woods & Park.

Basis of Recommendations Findings from several studies in the greater NYC area suggest that combinations of site intervention (tree planting, invasive removal, etc), paired with an full canopy forest, may be most effective for promoting regeneration of native species resulting in more self-sustaining urban forests.

Mitigating the Regeneration Issue in Hillside Woods & Park In Hillside Woods & Park there are three defining factors affecting forest regeneration, which we will address with practices to help grow the forest sustainably. These three factors are competing invasive vegetation, deer impact, and light on the forest floor.

Inventory & Data Collection Trees were assessed in terms of species, strata (position in canopy), height, crown width, height to crown, diameter at breast height (DBH), condition, visible defects, root problems and wildlife value. The forest was analyzed using fixed plot sampling.

Analysis Data from 30 field plots located throughout Hillside Woods & Park were analyzed using the i-Tree Eco model developed by the U.S. Forest Service. Additionally, Data from the 30 field plots was also analyzed using contemporary forestry analytics.

I-Tree Ecosystem Analysis

Tree Characteristics of Hillside Woods & Park The urban forest of Hillside Woods & Park has an estimated 5,105 trees with a tree cover of 85.7 percent. The three most common species are Norway maple (20.9 percent), Northern red oak (15.1 percent), and American beech (11.7 percent). The overall tree density in Hillside Woods & Park is 58 trees/acre.

Structural and Functional Values Urban trees in Hillside Woods & Park have the following structural values: Structural value: \$15.5 million, Carbon storage: \$535,000. Urban trees in Hillside Woods & Park have the following annual functional values: Carbon sequestration: \$11,200, Avoided runoff: \$13,500, Pollution removal: \$35,700\

Contemporary Forestry Analytics Data from the 30 field plots located throughout the forest stands of Hillside Woods & Park were analyzed using Excel to determine several characteristics of the various forest stands

Forest Stand Delineation For management purposes, Hillside Woods & Park was broken into 4 separate stands, numbered 1-4. Each stand is biologically and geographically distinct.

Forest Management Recommendations - Stand 1 All invasive shrubs shall be managed before other forestry operations take place. In this forest stand, Norway Maple trees shall be girdled or felled/ removed. This will reduce the abundance of Norway Maple, while opening the canopy to allow light into the lower forest layers and understory. Planting of native oaks, hickory, red/ sugar maple, and understory trees/shrubs shall be accomplished after the Norway Maple has been managed.

Forest Management Recommendations - Stand 2 Removal of invasive trees and shrubs in this stand is most important because there is less invasive plant pressure, and less Norway maple in the overstory. Accomplishing this removal will open the canopy just enough to allow for regeneration of species that intermediate levels of light to penetrate the canopy, while allowing trees that can regenerate at lower light levels (beech and hard maple) to thrive as well.

Forest Management Recommendations - Stand 3 There are some forest openings and areas of thinner canopy where invasive plants are dominant (mainly in the northern section of the stand). Removal of invasive Norway Maple and other invasive trees/shrubs will create a situation where the forest stand will grow rapidly, and will need to be managed to keep invasives under control as additional light is allowed to recharge the understory and shrub layers. Certain invasives exist in this stand that are not yet prevalent in the surrounding forest. These shall be managed to prevent their establishment elsewhere.

Forest Management Recommendations - Stand 4 We recommend the addition of a deer exclusion fence to completely enclose Forest Stand 4 (and possibly other stands!). To facilitate easy access in and out of the fenced area, both pedestrian and vehicle/ maintenance gates are recommended.

This stand shows little in terms of regeneration, similarly to all the stands. Also Norway Maple is outcompeting native trees, and shall be managed. This will open the canopy to recharge the understory and allow plantings to flourish. To increase diversity of all forest layers, plantings are recommended within the fence. These plantings will have no deer pressure so should consist of a diversity of species, many of which would otherwise be browsed to death by the healthy population of deer in Hastings-on-Hudson.

Deer Exclosure Fence An 8' tall woven or welded wire fence is recommended. It will require several gates (single pedestrian, double pedestrian, vehicular) and will be built through uneven terrain in a wooded area. Cost Per Linear Foot is approximately 20-35 LF (\$25 per LF for calculations below)

For Stand 4 alone ~5000 LF @ \$125,000

For Stand 3+4 ~6600 LF or @ \$165,000

For partial Stand 2+3+4 ~9,500 LF @ \$237,500

For all Stand 2+3+4 ~10,750 LF @ \$268,750

For all stands ~14,350 LF @ \$358,750

Recommendations – General Urban Forestry Administrative

Create a position for someone with proper education in silviculture to bring modern forestry techniques to the management of the urban forests in Hastings-on-Hudson. Engage the Hastings-on-Hudson Conservation Commission and Tree Board to have more involvement with urban forestry projects on all public land, including parks and street trees.

Inventory and Plan Review and Updates

Find and Leverage Resources and Funds for Urban Forest Improvement.

Promote Community and Grassroots Efforts.

Recommendations- Park Planning and Design - Access and Entrance; Trails and Wayfinding

Conclusion

Thank You & Survey Please take a moment to sign up on our emailing list before you go, or take note of this web address to go to the survey directly: <https://www.surveymonkey.com/r/SMZGMZ7>