



# Van Cortlandt Park Forest Action Plan 2022-2026

03/10/2022



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park alliance

# Table of Contents



## Introduction p.3

## Goals & Objectives p.4-5

Promote Longevity of Mature Hardwood Forest  
Reduce Impact of Invasive Species Within Worksites  
Decrease Forest Fragmentation

## Management Terminology p.6-7

Management  
Maintenance  
Monitoring

## Site Selection p.8-9

## Forest Worksites p.10-24

Tibbetts Wetland Worksite  
Floodplain Forest Worksite  
Vault Hill Worksite  
Woodlawn Worksites  
Northwest Forest Worksite  
Jerome Wetland Worksite  
Croton Worksite

## Work Crews p.25-26

VCPA Natural Areas Stewardship Team  
VCPA Urban Ecology Teen Internship  
NYC Parks Van Cortlandt Landscape & Forest Restoration

## Removal Methodology, Reporting & Assessment p.27-28

Removal Methodology  
Reporting  
Assessment

## Worksite Research Initiatives p.29-30

## Looking Ahead p.31-32



# Introduction

With roughly 640 acres of forest and wetlands in Van Cortlandt Park dedicated to Forever Wild Preserve, active invasive species management is needed to perpetuate a healthy, biodiverse forest into the future.

Van Cortlandt Park Alliance's (VCPA) mission is to preserve, support, and promote the recreational, ecological, and historical value of Van Cortlandt Park. Through the creation of this Forest Action Plan, we look to address supporting and promoting the ecological value and biodiversity of Van Cortlandt Park through active invasive species management of roughly 200 acres of forest from 2022-2026.

This plan utilizes recommendations from the NAC & NYC Parks Forest Management Framework, NAC's Conservancy Engagement Program, and the NYC Parks VCP 2014 Forest Management Plan.



# Goals & Objectives



# Goals & Objectives

When performing forest management and restoration, it is important to state goals and objectives for the work.

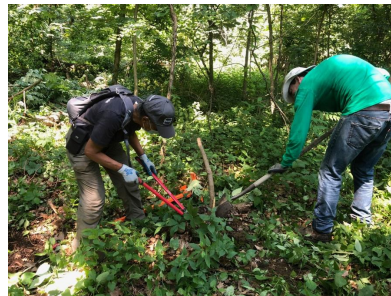
The main goal of this plan is the active invasive species management of 200 acres of forested land within Van Cortlandt Park by VCPA over the five-year span of 2022-2026. Each worksite contains its own set of in-depth goals and objectives.



## Promote Longevity of Mature Hardwood Forest

The mature hardwood forests of Van Cortlandt Park are of high concern to protect and manage for. Data compiled by the Natural Areas Conservancy (NAC) found that roughly 65% of the forest is either described as Oak Dominated, Coastal Oak-Hickory, or Oak-Tulip Tree community associations.

Active management to promote the continued success of the upland oak forests as well as other mature forests (sugar maple) of Van Cortlandt Park is crucial to **maintaining the biodiverse communities** tied to these mature forests and the aesthetics that a mature forest carries.



## Reduce Impact of Invasive Species Within Worksites

The work tied to this plan will reduce the amount of non-indigenous herbaceous cover within the worksites to a goal of between 0-10%. Reduction of vine coverage within the site will improve the continuation of a mature forest canopy.

Removal of non-indigenous shrubs and trees in the midstory and understory **helps promote an indigenous, biodiverse forest community** for the future.



## Decrease Forest Fragmentation

Nature trails and hiking paths dissect Van Cortlandt Park into smaller forest patches. Although many of these trails are small, they can still have negative impacts on forest health.

Actions from this plan will **reduce forest fragmentation** through the closing of social paths within the worksites.



# Management Terminology

# Management Terminology

In the context of this plan, active invasive species management of the natural areas are split into three stages.



## Management

The initial removal of non-indigenous species from within a worksite. This can potentially require more intense removals and is the stage in which any large-scale plantings to reestablish sites would occur. Some locations may require multiple years and visits to specific sites for complete removal of non-indigenous plants while others may only require one pass through.



## Maintenance

Following management, removals of non-indigenous species continue to occur, but at a lower scale due to less presence after initial removals in the management stage. Some smaller more local plantings may occur during this stage.



## Monitoring

Occurring as the terminal stage, monitoring can essentially last forever if the means for active management continue. Regular sweeps through sites within the monitoring stage occur to search for any emerging threats. The long-term goal of VCPA is to shift all of Van Cortlandt Park's natural areas into a monitoring phase on invasive species management.



# Site Selection



## Site Selection

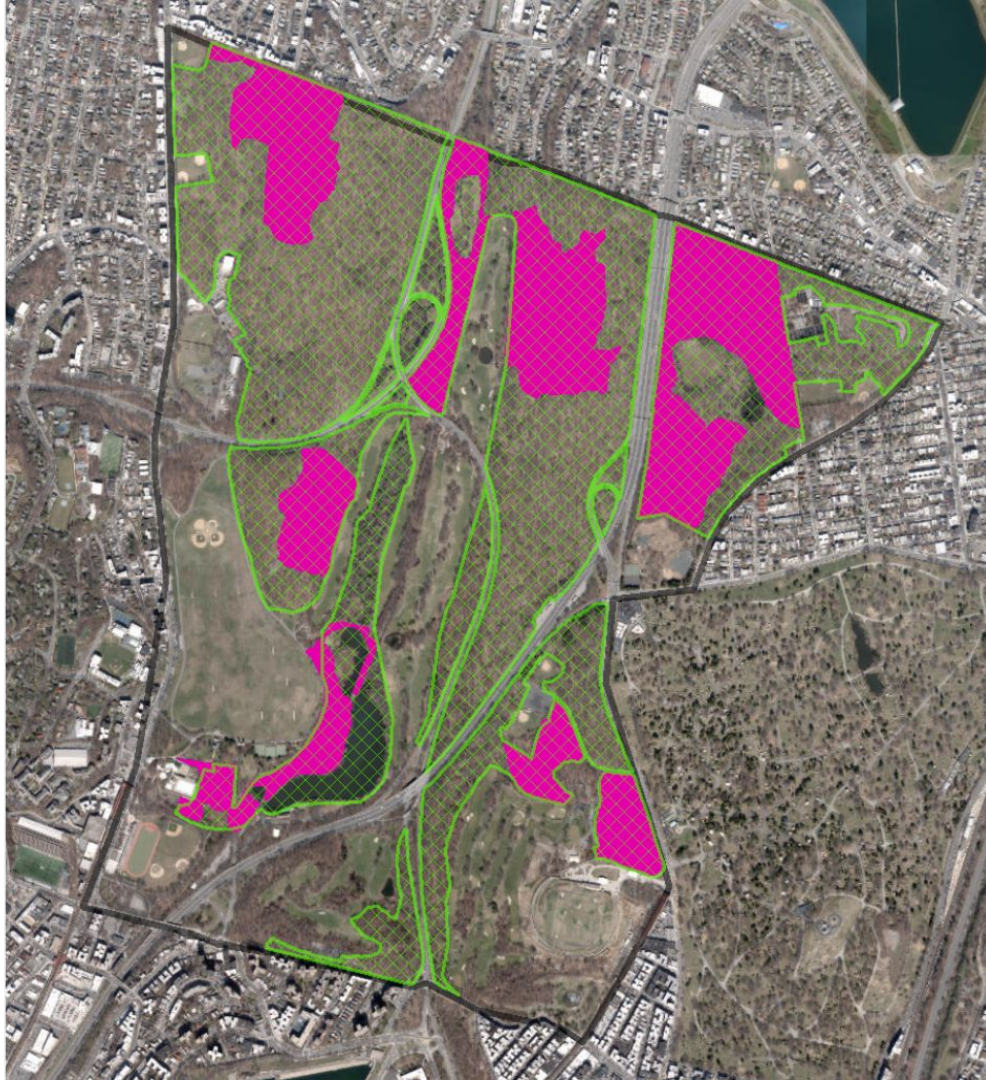
The eight worksites were chosen based on their health and their location. Using forest health data provided by NAC through the Conservancy Engagement Program, sites were chosen consisting mainly of high health, but that are in high risk of invasion of non-indigenous plant species. Fragmentation of the forest by trails or roadways allowed for the creation of borders of these worksites.

## 2022-2026 Forest Action Plan Worksites

The eight worksites chosen for invasive species management total 205.2 acres in total. Just under 640 acres of Van Cortlandt Park are designated as Forest Wild Preserve by NYC Parks.



**Data Sources: NYC Parks,  
Van Cortlandt Park Alliance**





# Forest Worksites

# Tibbetts Wetland Worksite

## Goals & Objectives

1. Continue to manage the wet meadow through annual mowing and removals of non-native vines and herbaceous plants that threaten its biodiversity.
2. Remove non-indigenous shrubs and trees below 6" diameter. Reduce garlic mustard to <10%.
3. Continue to monitor park visitors' usage of this worksite. As an active natural area, it is important to keep park visitors on the trail.
4. Supplement plant removals with a site specific plant palette guided by biodiversity monitoring data, soil composition, and with climate adaptation in mind.

## Tibbetts Wetland Worksite

### 2022-2026 Forest Action Plan

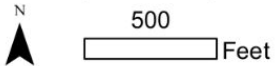
Worksite Acreage: 20.6

Work Timeline:

Management: 2019-2021

Maintenance: 2022-2023

Monitoring: 2024-indefinitely



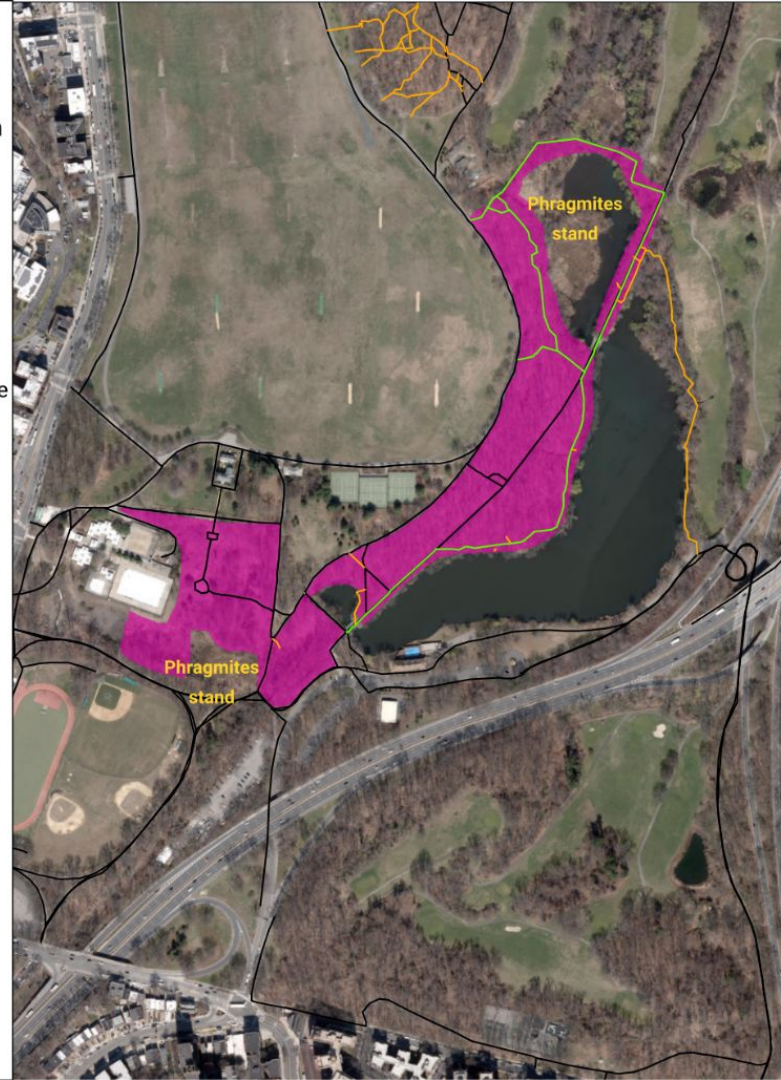
- Tibbetts Wetland Worksite
- John Kieran Trail
- Other Trails
- To Be Closed Trails



Data Sources: NYC Parks,  
Van Cortlandt Park Alliance



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## Tibbetts Wetland Worksite (cont.)

**Staff Hours over 5 years:** 840 staff hours

**Budget:** \$175,660

**Partners:**

- NYC Parks: Van Cortlandt Park Landscape & Forest Restoration Crew
- Natural Areas Conservancy (trail closures)
- Neighboring Schools (garlic mustard removals)



# Floodplain Forest Worksite

## Goals & Objectives

- 1. Improve the future of the forest canopy within the southern end of this worksite through the removal of midstory and sapling non-indigenous tree species (Norway maple, sycamore maple and black locust) and planting of a diverse indigenous tree community.
- 2. Cut back vine species from sapling, midstory and canopy trees throughout the worksite.
- 3. Keep the mile-a-minute patch in the southern end of the worksite in check through stewardship events, pulling the plant during the summer months.
- 4. Supplement plant removals with a site specific plant palette guided by biodiversity monitoring data, soil composition, and with climate adaptation in mind.

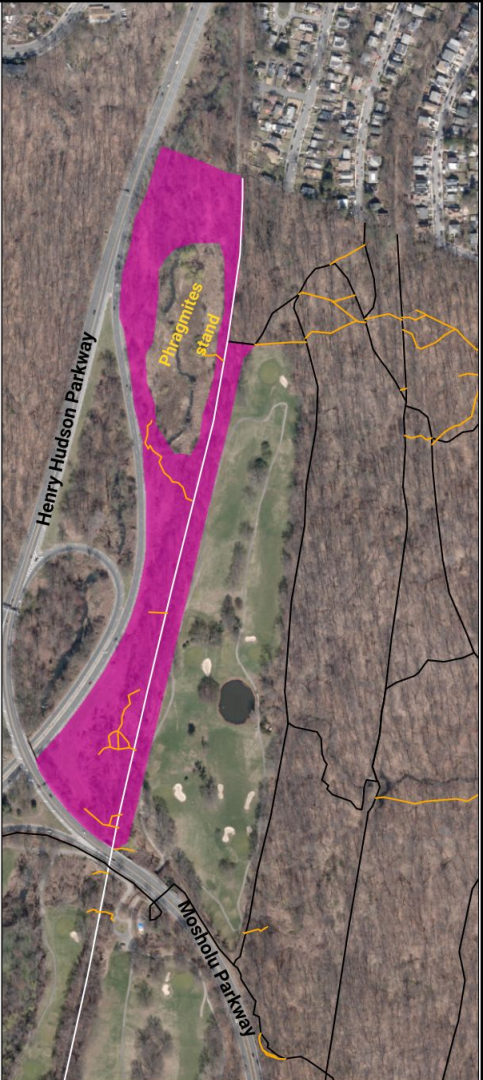
## Floodplain Forest Worksite

### 2022-2026 Forest Action Plan

Worksite Acreage: 17  
Work Timeline:  
Management: 2019-2023  
Maintenance: 2023-2024  
Monitoring: 2025-indefinitely



Data Sources: NYC Parks,  
Van Cortlandt Park Alliance



## Floodplain Forest Worksite (cont.)

**Staff Hours over 5 years:** 1,176 staff hours

**Budget:** \$205,782

**Partners:**

- NYC Parks: Van Cortlandt Park Landscape & Forest Restoration Crew
- NYC Parks: Natural Resources Group
- Groundwork Hudson Valley (Japanese knotweed removals)
- Westchester Parks Foundation (trash removals, invasive removals)

# Vault Hill Worksite

## Goals & Objectives

1. Improve the groundcover within the worksite through the removal of bittersweet and Japanese vine honeysuckle from growing along the ground.
2. Continue active management of the meadow along Vault Hill through annual mowing and expand to focused removals of porcelain berry and mugwort within the meadow.
3. Promote the oak dominated forest through removals of non-indigenous tree and shrub species within the worksite.
4. Supplement plant removals with a site specific plant palette guided by biodiversity monitoring data, soil composition, and with climate adaptation in mind.

## Vault Hill Worksite 2022-2026 Forest Action Plan

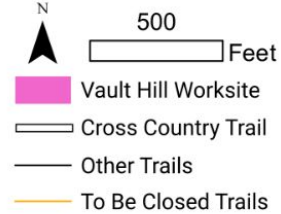
Worksite Acreage: 16.6

Work Timeline:

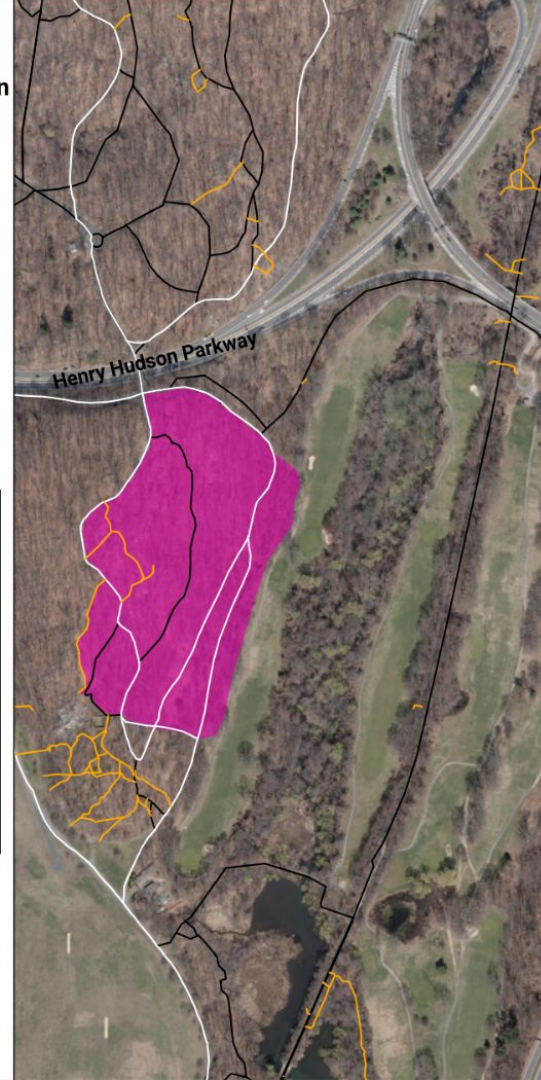
Management: 2022-2023

Maintenance: 2023-2024

Monitoring: 2025-indefinitely



Data Sources: NYC Parks,  
Van Cortlandt Park Alliance



## Vault Hill Worksite (cont.)

**Staff Hours over 5 years:** 1250 staff hours

**Budget:** \$302,348

**Partners:**

- NYC Parks: Van Cortlandt Park Landscape & Forest Restoration Crew
- Woodlawn Cemetery Landscape Restoration Program



# Woodlawn Worksites

## Goals & Objectives

1. Reduce the threat of Japanese angelica tree and glossy buckthorn from this section of the forest.

2. Improve the future forest canopy through non-indigenous vine removals and non-indigenous tree removals that are below 6" diameter. Reduce garlic mustard to <10%.

3. Promote the growth of a biodiverse oak dominated forest system through indigenous plant regeneration both naturally and artificially.

4. Supplement plant removals with a site specific plant palette guided by biodiversity monitoring data, soil composition, and with climate adaptation in mind.

## Woodlawn North & South Worksites

### 2022-2026 Forest Action Plan

North Worksite Acreage: 35.3

South Worksite Acreage: 23.8

Work Timeline:

Management: North 2025-2026/ South 2022-2023

Maintenance: North 2026-2027/ South 2023-2024

Monitoring: North 2028-indefinitely/

South 2025-indefinitely



Woodlawn North Worksite

Woodlawn South Worksite

John Muir Trail

Other Trails

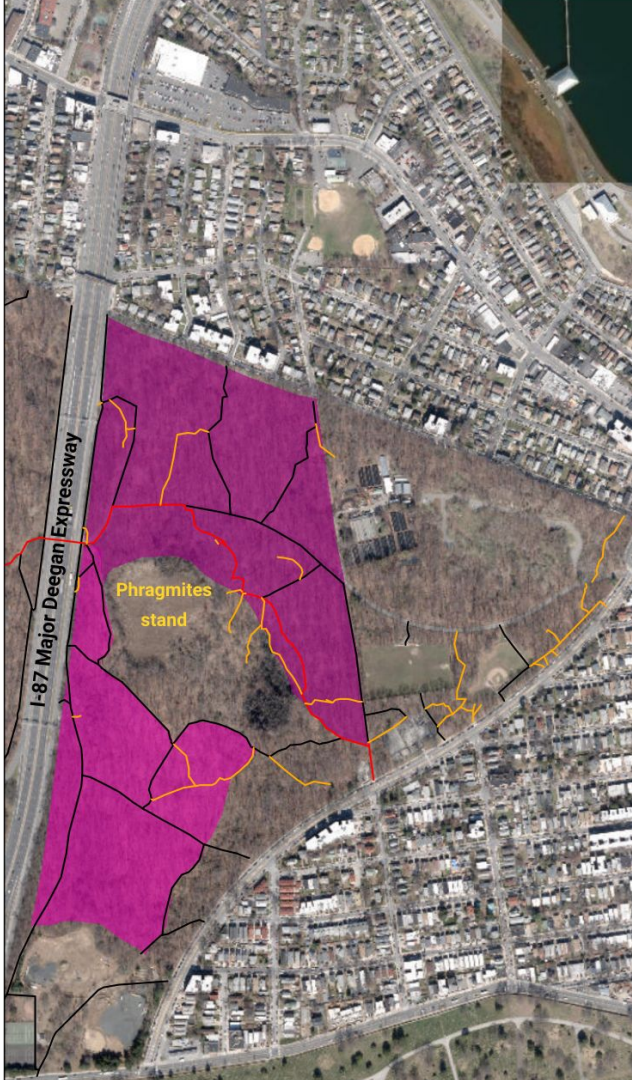
To Be Closed Trails



Data Sources: NYC Parks,  
Van Cortlandt Park Alliance



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## Woodlawn Worksites (cont.)

**Staff Hours over 5 years:** North - 1,303 staff hours    South - 1,176 staff hours

**Budget:** North - \$444,940    South - \$340,580

**Partners:**

- NYC Parks: Van Cortlandt Park Landscape & Forest Restoration Crew
- Women of Woodlawn
- Woodlawn Taxpayers Association
- Natural Areas Conservancy (trail closures)

# Northwest Forest Worksite

## Goals & Objectives

1. Improve biodiversity within the worksite through removal of non-indigenous shrubs, vines, and trees from the midstory and understory and promoting oak dominated forest growth. Heavy focus on removal of winged euonymus and Norway maple.
2. Reduce forest fragmentation within worksite through the closure of desire lines.
3. Remove garlic mustard and other herbaceous ground cover to less than 10% coverage within the worksite through hand removals.
4. Supplement plant removals with a site specific plant palette guided by biodiversity monitoring data, soil composition, and with climate adaptation in mind.

## Northwest Forest Worksite

### 2022-2026 Forest Action Plan

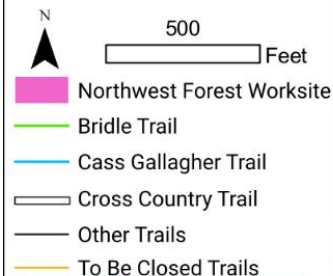
Worksite Acreage: 33.1

Work Timeline:

Management: 2023-2024

Maintenance: 2024-2025

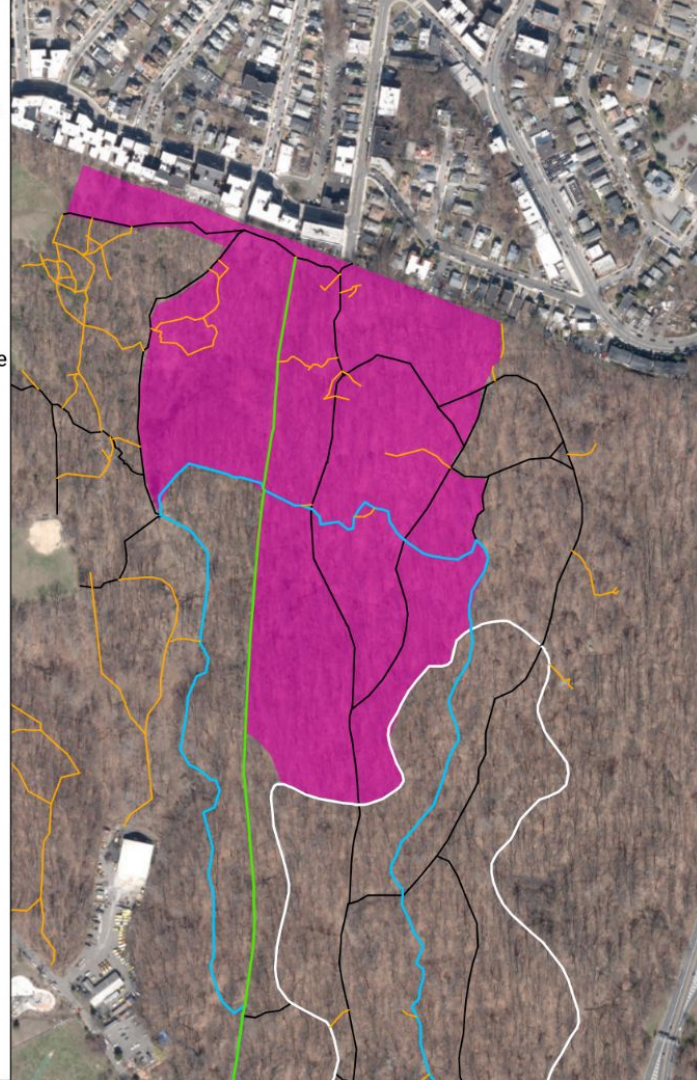
Monitoring: 2026-indefinitely



Data Sources: NYC Parks,  
Van Cortlandt Park Alliance



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## Northwest Forest Worksite (cont.)

**Staff Hours over 5 years:** 1260 staff hours

**Budget:** \$482,485

**Partners:**

- NYC Parks: Van Cortlandt Park Landscape & Forest Restoration Crew
- Riverdale Main Streets Alliance
- South Yonkers BID



# Jerome Wetland Worksite

## Goals & Objectives

1. Reduce non-indigenous vines (English ivy and periwinkle) to <10% coverage within the worksite. This will in turn improve the native herbaceous cover, including the spring ephemeral Virginia spring beauty (*Claytonia virginica*).

2. Support NYC Parks in protection of the ash species within the worksite, and where die-off occurs, replace with indigenous wetland tree species.

3. Promote an indigenous future canopy through the removal of non-indigenous shrubs and trees in the midstory and understory.

4. Supplement plant removals with a site specific plant palette guided by biodiversity monitoring data, soil composition, and with climate adaptation in mind.

## Jerome Wetland Worksite

### 2022-2026 Forest Action Plan

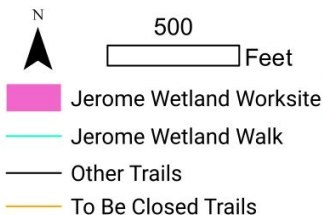
Worksite Acreage: 21.9

Work Timeline:

Management: 2024-2025

Maintenance: 2025-2026

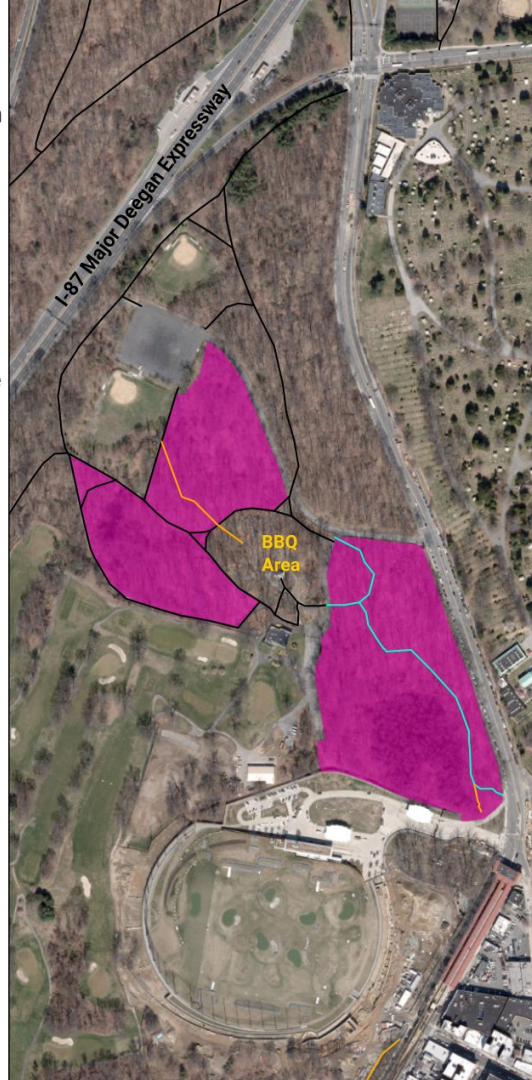
Monitoring: 2027-indefinitely



Data Sources: NYC Parks,  
Van Cortlandt Park Alliance



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## Jerome Wetland Worksite (cont.)

**Staff Hours over 5 years:** 1,008 staff hours

**Budget:** \$307,620

**Partners:**

- NYC Parks: Van Cortlandt Park Landscape & Forest Restoration Crew
- NYC Parks: Natural Resources Group

# Croton Worksite

## Goals & Objectives

1. Promote the sugar maple (*Acer saccharum*) stand within the worksite through reduction of competition between the maples and non-indigenous plant species in the midstory and understory.
2. Preserve stands of spring ephemerals through selective garlic mustard pulls that threaten the stands. Removal of garlic mustard to less than 10% coverage within worksite.
3. Reduce forest fragmentation within the Croton Woods by closing all social paths within the site.
4. Supplement plant removals with a site specific plant palette guided by biodiversity monitoring data, soil composition, and with climate adaptation in mind.
5. Partner with LHPRISM to monitor and search for solutions to jumping worm management and better understand their ecology.

## Croton Worksite 2022-2026 Forest Action Plan

Worksite Acreage: 36.9

Work Timeline:

Management: 2026-2027

Maintenance: 2027-2028

Monitoring: 2029-indefinitely

N

500

Feet



Croton Worksite



John Muir Trail



Old Croton Aqueduct



Other Trails



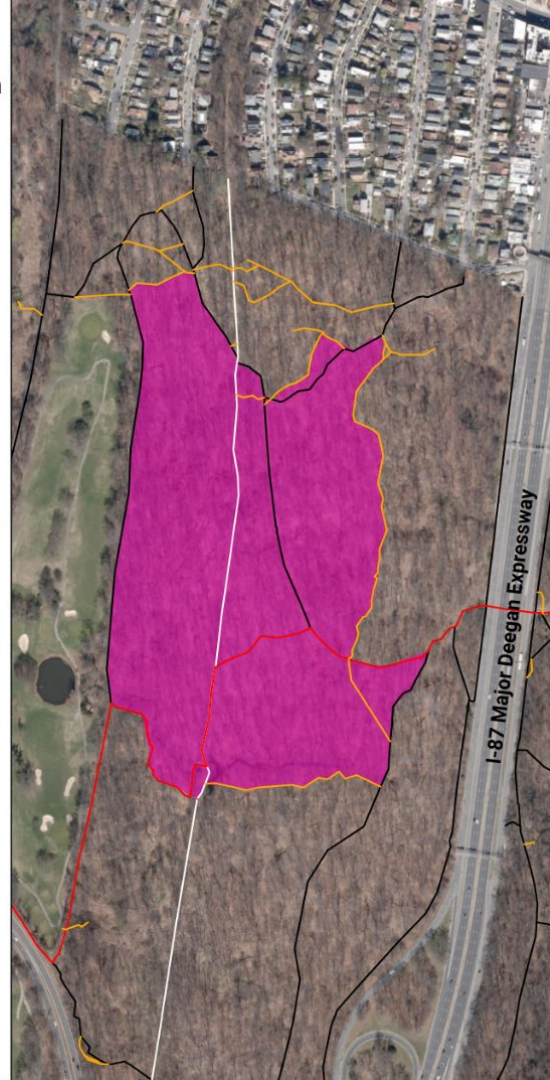
To Be Closed Trails



Data Sources: NYC Parks,  
Van Cortlandt Park Alliance



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## Croton Worksite (cont.)

**Staff Hours over 5 years:** 896 hours

**Budget:** \$260,860

**Partners:**

- NYC Parks: Van Cortlandt Park Landscape & Forest Restoration Crew
- Lower Hudson Partnership for Regional Invasive Species Management



# Work Crews



# Work Crews

Work described in this plan will be led by Van Cortlandt Park Alliance (VCPA) in partnership with NYC Parks.



## VCPA Natural Areas Stewardship Team

VCPA will take the lead in planning, fieldwork, monitoring, reporting, and outreach plus training of volunteers within the worksites.



## VCPA Urban Ecology Teen Internship

Under the direction of Van Cortlandt Park's Landscape & Natural Areas Manager and Van Cortlandt Park Alliance's Program Director: Restoration & Stewardship, the Vault Hill Worksite will be a focused effort of the summer internship program.



## NYC Parks Van Cortlandt Landscape & Forest Restoration

NYC Parks staff support efforts within worksites by transporting materials with Parks vehicles and performing chainsaw work as needed.



# Removal Methodology, Reporting, and Assessment

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The Van Cortlandt Park Alliance will follow standards designed for proper removal, as well as reporting and assessing the work performed in the field.



## Removal Methodology

Manual removal will occur for all species targeted within the worksites. Much of the work will be performed alongside volunteers from the community and therefore no herbicide usage will occur. Handsaws, loppers, and weed wrenches will be used for removal of woody material. VCPA staff will utilize mechanical tools such as hedge trimmers and weed whackers when mowing meadows or cutting back vinelands or herbaceous plants. Many species will be removed by hand. Solarization of Japanese knotweed will continue where possible.



## Reporting

All work in the field will be reported regularly in VCPA's internal forest management database as well as in NYC Parks Natural Areas Management Assessment (NAMA).



## Assessment

Site assessments both pre- and post-management activities will take place following NAC's Rapid Site Assessment protocol, with additions created by VCPA to include data collection of both ground dwelling and flying invertebrates. This monitoring data assists in understanding restoration success, and generating a site specific plant palette.



# Research Initiatives



# Research Initiatives

In congruence with forest management and monitoring efforts, the Van Cortlandt Park Alliance conducts several ongoing projects in the natural areas of Van Cortlandt Park to better understand the water chemistry, geochemistry and biological diversity of the park.



Our new research page will  
go live later in March 2022.



# Looking Ahead



# Looking Ahead

Following this plan, by the end of 2026, the Van Cortlandt Park Alliance will be monitoring 111.1 acres, 57.2 will be in maintenance, and 36.9 will be in management.

Areas within these worksites that were not possible to manage for non-indigenous plant species in this capacity will have been identified.

The next step will be to create a follow-up action plan, to scale up efforts, with an overarching goal of actively managing the entirety of the natural areas of Van Cortlandt Park.

Photography by EJ Karen



# Thank You

## Questions?

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