

# Cape May Point State Park-A Case Study for Improving the Maritime Forests

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## INTRODUCTION

In 2004, the Cape May Point State Park received a 5 year WHIP (Wildlife Habitat Incentives Program) contract from the USDA-Natural Resources Conservation Service for permanent restoration and enhancement of its maritime forest and transitional habitat. USDA-NRCS Practices planned and implemented included: brush management, (Practice Code 314) tree/shrub establishment (612), and Early Successional Habitat Development/Management (647). These practices are intended to remove invasive shrubs, vines and phragmites and to re-establish native trees and shrubs to improve native wildlife and migratory bird habitat.

Early 2000 surveys of the State Park by the Army Corps of Engineers discovered several rare plants. Most wetland species unaffected by the invasive vines, however a Species of Concern, blue boneset (*Eupatorium coelestinum*), grows in the transitional areas often smothered in vines. It is believed that the reduction in density of the vines would prove beneficial to this species.

## ECOLOGICAL DESCRIPTION

The Cape May Point State Park encompasses 190 acres of freshwater wetland, scrub-shrub, and maritime forest at the southern tip of New Jersey. Wetland and transitional areas are almost completely dominated by common reed (*Phragmites*). Pockets of maritime forest are scattered throughout the Park. Common trees within the forest include post oak (*Quercus stelata*), white oak (*Quercus alba*), black oak (*Quercus velutina*), southern red oak (*Quercus falcata*), chestnut oak (*Quercus prinus*), black gum (*Nyssa sylvatica*), sassafras (*Sassafras albidum*) persimmon (*Diospyros virginiana*), mockernut hickory (*Carya tomentosa*), white mulberry (*Morus alba*), black cherry (*Prunus serotina*), pitch pine (*Pinus rigida*) and eastern red cedar (*Juniperus virginiana*). Less common species include serviceberry (*Amelanchier arborea*), sweetbay magnolia (*Magnolia virginiana*), and hackberry (*Celtis occidentalis*). Major native understory shrubs include arrowwood viburnum (*Viburnum dentatum*), bayberry (*Morella pensylvanica*), wax myrtle (*Morella cerifera*), high bush blueberry (*Vaccinium corymbosum*), elderberry (*Sambucus canadensis*), and winged sumac (*Rhus copallinum*).

## **PROBLEM IDENTIFICATION**

Most of the forest has been stressed by the harsh seashore conditions i.e. salt water flooding and windfall. Average height of the trees is only 40 feet with a diameter of 10 inches. Mortality of the vegetation due to flooding and windfall has allowed too much light into the forest, promoting the invasion of invasive species. Some common invasives include: Japanese honeysuckle (*Lonicera japonica*), English ivy (*Hedera helix*), porcelain berry (*Ampelopsis brevipedunculata*) multiflora rose (*Rosa multiflora*), European privet (*Ligustrum vulgare*) and autumn olive (*Elaeagnus umbellata*).

This project targeted the invasive porcelainberry, Japanese honeysuckle, multiflora rose and the most tenacious, virgin's bower clematis (*Clematis flammula*), an introduced species from southern Europe. This plant most aggressively contributes to windfall by smothering the trees, pulling down limbs, and draping the forest floor thereby inhibiting the succession of native species. When cut, it exudes a noxious gas that burns the eyes, so protection is needed. Mowing alone to control this plant is not very effective. Also, it takes approximately 3 weeks to show injury from a glyphosate treatment. It's a very tough plant and there is not much information in the literature on the extent of its range and effective control methods. The porcelainberry is fairly easily controlled by repeated mowing and multiflora rose is starting to be affected by the rosa rosette disease that is moving in from the Midwest.

Native vines include trumper creeper (*Campsis radicans*), greenbrier (*Smilax rotundifolia*), fox grape (*Parthenocissus quinquefolia*), and poison ivy (*Toxicodendron radicans*). These plants also climb trees, but most have useful attributes. For example, Virginia creeper berry is highly desired by birds and being in a major flyway, this fruit is a good energy source for migrating birds. In addition, the trumpet creeper flower is a good hummingbird attractant. Unfortunately, in the process of controlling the undesirables, especially the first year, some of these native vines were destroyed also. However, it appears that some of these native vines are volunteering back on their own. Future treatments will be more selective as to minimize the harm to the natives.

## **RESTORATION PLAN**

Treatment of the entire 44 acres of forest did not seem feasible from a financial or labor standpoint. It was decided to concentrate in a 20 acre "target" control area visible from the main nature trail through the park. The methods used would be both mechanical and chemical control. Approximately 5 acres a year would be treated.

### Year 1-2004

The first year control would be the most aggressive year as large equipment such as drum choppers (Gyrotrac 18XP) were brought in to shred large areas of aggressive vines. Smaller sections around native trees and shrubs were cut and mowed by Park personnel with smaller equipment. This operation was done in May just as the vines leafed out and had very little root reserves to resprout. In late fall of 2004, new growth of the invasives were sprayed with Rodeo (Glyphosate). This is an effective time to spray for greater translocation of the chemical to the roots as the plant prepares to shut down for the winter. Also, a revegetation plan was developed the first year in anticipation of needing healthy and available native plant species by the third year of the project.

### Year 2-2005

This season required follow-up treatments in areas that saw additional regrowth. Most of the mechanical work, however, was done with weed whackers, mowers, etc. by Park seasonal labor. Some additional spraying was done again in the fall. No nursery grown plants have been installed yet.

### Year 3 – 2006

Planting was started in the spring in large areas where good invasive control was accomplished in the previous two years. Most of the plants installed were those tree species native to the Park. Most of the containerized species were purchased through a large restoration nursery in southern New Jersey, Pinelands Nursery, and through the State of NJ, Forest Tree Nursery for the smaller, bare root stock. Three species that were desired, but difficult to obtain commercially were Post oak (*Quercus stellata*), American holly (*Ilex opaca*), and eastern red cedar (*Juniperus virginiana*).

To allow for easier maintenance in the larger, more open areas, the trees were installed in a plantation style planting. By planting in rows, it would be easier to mow and/or spray between the rows for future invasive weed control. In smaller sections, the new plants were scattered throughout. Because of deer and rabbit predation, most all of the newly planted seedlings had tree guards installed around them. These guards also helped protect and identify them as desirable plants as maintenance occurred.

### Years 4 and 5, 2007-2008

Early spring mechanical weed control, fall chemical treatment and planting/replanting seedlings that died throughout the year, continued using seasonal labor if possible.

## **RESULTS**

Invasive species control was achieved, at least in the short term, in target areas of the park (i.e. along nature trails, viewing platforms, etc.) Although only about ½ the maritime forest was improved with this project, Park personnel were getting good reception from the public because improvements were targeted to highly visible areas.

## **LESSONS LEARNED**

1. You're never really done. Repeated mowing/chemical treatment will need to be done periodically as maintenance in previously treated areas and where new outbreaks occur.
2. Need a consistent workforce dedicated solely to new invasives control and retreatment.
3. Using volunteer labor is inexpensive however , contracting out the work would have been more beneficial for long term control.
4. Nuisance fauna like deer, rabbits, and geese can damage new seedlings and must be controlled also.