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# Glossy Buckthorn Control Project Final Report
# Oswego County Reforestation Property

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## Introduction and background

The Oswego County Soil and Water Conservation District (SWCD) is the lead agency in managing reforestation property for Oswego County. Glossy buckthorn (*Frangula alnus)* was found to be present on county owned land located within the Happy Valley Wildlife Management Area. This invasive species out competes native vegetation threatening forest sustainability and creating inhospitable environments for most wildlife. Control of this population as a seed bank was important as it is within one mile of bog turtle habitat and buckthorn is an aggressive invader of fens, bogs and meadows. The Oswego County SWCD proposed to treat a 15 acre area chemically to control this population of buckthorn and eliminate these plants as a seed source.

## Chemical Treatment

The Oswego County SWCD developed a bid package in order to hire a NYS certified chemical applicator. Upon conducting the bid process, Miller's Turf of Lowville, NY was selected to complete the chemical application on the 15 acre area with glossy buckthorn being the target species.

Approximately 4 acres of the project site contained dense growth of multi-stem buckthorn reaching heights of approximately 15'. The remaining 11 acres contained individual stems, patches and smaller clumps. The stems in this section ranged from less than 1 foot to 8 feet in height.

Treatment involved both foliar and basal bark application of Garlon 4 Ultra and Hawkeye (surfactant) with back pack sprayers. Foliar application was the primary means of control where basal bark application was utilized in instances when the entire foliage could not be reached. In those cases basal bark was completed in addition to foliar spraying to ensure sufficient mortality. Initial applications were made in mid-August with follow-up treatment being completed until early September.

## Observations

Following the initial treatment, inspections of the area were conducted each week to review the success, with a final inspection and inventory conducted approximately 3-weeks after. Utilizing fixed area plots, buckthorn stems were counted when feasible or a percentage of visible die back (% of buckthorn impacted by chemical) was noted in the more dense areas. Based on visible die back (wilted and browning leaves, leaf curl, etc.) this treatment impacted an average of 85 % of the buckthorn present. The stems found that did not show signs of impact were either hidden by other vegetation (i.e. ferns) or were treated more recently and not given a chance to exhibit signs of mortality. A significant difference was noted between the area of dense growth compared to the acreage comprised of patches and scattered stems. In the dense area, approximately 75% of the buckthorn shows signs of die back and mortality. It is thought that the remaining green foliage will show die back in the near future, as this area was treated in several stages. The area of lower stem density had approximately 95 % dieback. The only stems missed in this area were those shorter than the fern cover. It is expected that the overall average of visible impact would be higher if this inventory was conducted in another 1-2 weeks.

The goal of this project was to eradicate or suppress glossy buckthorn populations on the project site. Given the findings of the final inspection, suppression would be the appropriate term to describe the outcome of the treatment. The efficiency of this treatment should allow for the return of only a small number of buckthorn stems to this area, making subsequent treatments more effective and manageable. Overall, the seed bank has been greatly reduced, decreasing the chance of this invasive spreading to new areas. It is also expected that in areas where sufficient light is reaching the forest floor, that white pine may regenerate given the significant seed source available in the area.

## Future monitoring and treatments

In spring/summer of 2013 the Oswego County SWCD will begin monitoring this area for any return of glossy buckthorn. Efforts in 2013 will likely need to be directed towards the area of dense growth. Glossy buckthorn has also been noted outside of the 15 acre area and this will also be a target for any funding secured in 2013. These stems are less dense than the area already treated and are primarily less than 4’ in height. Treatments will once again involve foliar application, but may also involve cut-stem treatment and hand pulling where applicable.

**This is a typical small patch of glossy buckthorn found on the project site, prior to treatment.**

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**Pictured above is a dense, multi-stem clump of glossy buckthorn prior to being treated.**

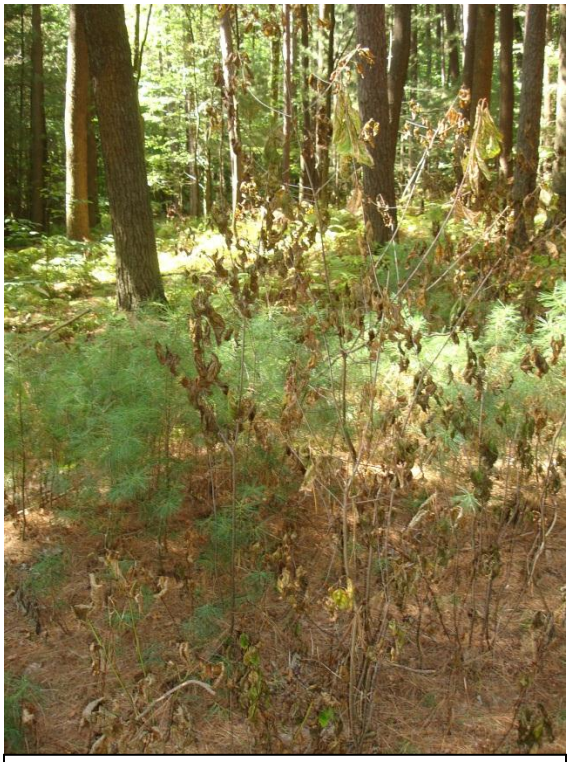
**This was taken 1 week after treatment. Note the drooping leaves.**

**This photo was taken 2 weeks after treatment. Note the change in color of the foliage as well as curling of the leaves.**

**Approximately 3 weeks after the initial treatment.**

**A typical small patch of buckthorn showing significant signs of mortality.**

**A larger clump of buckthorn approximately 3 weeks after treatment.**



**This photo shows the success of the treatment as well as a crop of white pine seedlings that will occupy this space without invasive competition.**