

Hanover Town Forest / Goodwin Tract
Appendix G for Management Plan
2019

INVASIVE PLANT BEST MANAGEMENT PRACTICES for prevention and treatment

Prevention and Education:

Education: Be sure that foresters, operators of forestry equipment and property monitors are familiar with the actual invasive plants found in or near the forest or plants likely to invade after the disturbance caused by a forestry operation. To date, the only invasive plants found at this tract are coltsfoot, shrub honeysuckle, glossy buckthorn and barberry.

Post warning for trail users to submit report on locations of key invasive plants observed

Prevent spread of invasive plants when working or recreating in the forest.

For example, trail users should clean boots, bike users should have clean tires, and forestry equipment should have been pressure cleaned prior to arrival. Work or recreation in infested areas should be avoided until control of invasive plants is established. Minimize spread of invasives by operating equipment on frozen ground / snow cover. Best if work is done where invasive plants are not a problem.

Create a Stewardship Team: A few neighbors who like to walk the forest should be trained to identify new problem plants. Ideally, they would get out twice a year to look for these plants since plants have different dates of bloom. These folks could help to control a new invader or report need for help of some sort.

Early Detection and Rapid Response (EDRR)

Many invasive plants have the potential to spread quickly. For our purposes, an EDRR plant is a species **new** to the forest or nearby, a species introduced by recent disturbance of some sort (such as ice storm or logging operation), or a plant new to the state. Control or containment should happen if there are isolated colonies, and the plant is not yet widespread.

Establish a timeline and protocol for scouting annually for EDRR plants: Certain species are easily identified at certain times during the year, so schedule accordingly.

Act quickly: For any new invasive plant that has been observed, swift action is essential. Lack of rapid control effort will increase spread of the plant and the cost of removal will escalate.



Information: Both NH and VT have suggested practices for the control of specific invasives that should be followed to reduce the spread in forested lands. See end notes¹.

Treatment of Existing Invasive Plants

The Town Forester and / or land stewards should determine the extent of an invasive plant, and record (GPS) both the locations and relative quantity of the plant species so that it can be mapped and a control and action strategy can be outlined. Colonies should be recorded with the town's mapping software.

Basic considerations:

- *Determine who will coordinate the work to control the plant.*
- *Determine how the work will be funded.* Would a grant help cover the work needed?
- *Determine which treatment strategy makes sense* for the particular invasive species and a particular site; for example proximity to wetlands will require a different approach than woodland. For each invasive plant, the timing and method of treatment for invasive plants varies. Both NH and VT have recommended treatments²; choose an appropriate one that can be implemented for the site. Preferably, hand removal would be best for small infestations, but conditions may make this difficult.
- *Strategy based on the level of infestation:*
 - Light: eradicate the invasive plants, keep area clean. Since there would be seeds or resprouts of the invasive plant, check for new plants annually, before likely seeds ripen.
 - Moderate: prioritize area by threat posed by an invasive plant, special features of the site, and feasibility of treatments.
 - Heavy: Prioritize where infestation covers less than 10-30% of area.
- *Give priority to sites with special vegetation*, such as rare plants or remnant areas of native plants.
- *Use a Site-Led Approach* In the town forest, based on the forest block names, survey invasive plants so that *all* invasive plants in a particular forest block can be removed in a comprehensive manner.
- *Work from outside towards the center of an infestation.* The outer plants are probably the ones established most recently. This approach should help control the spread of the plants.
- *Be quick to respond to observations of new infestations.* For example, carry a plastic bag so you can pick and bag a newly established invasive plant, and flag the location where the plants have established so they can be checked on a return trip. Invasive plants will more readily establish near open areas or along trails or roads, but can be found in woodland interiors.
- *Work with chemicals* on town forestland would need a certified applicator to do that work.
- *Scout a site annually to determine the level of control* that has been established for a particular invasive plant control effort.
- *Record results of control efforts* to guide future efforts at a site.
- *Revegetation with native species may be required* See next section. Survey the vegetation that is found near the invasive plants and try to re-introduce these into the opening once invasives are removed.

Restoration and Revegetation

- *Prioritize natural revegetation:* Natural revegetation may occur after the removal of an invasive plant; however, certain methods of removal may retard that process, such as excessive site disturbance, slow regeneration of expected plant replacements or chemical treatment. Excessive deer browse will complicate revegetation efforts, as will repeated disturbance, dry conditions or a lack of native plant materials nearby.
- *Act quickly to do restoration work:* restoration should be planned well in advance of invasive plant removal and materials ready to plant right after treatment of invasives.
- *Certain invasive plants may require repeated treatment:* In this case, revegetation efforts may need to be delayed; a temporary annual cover crop may be needed to protect the site until treatment is finished. Ideally, invasive plants should be reduced by 90% before revegetation efforts begin.
- *Reforestation as a goal may require special treatment:* Native woody plants would need to be established to prevent further infestation. [??? - p 44?] In this case, actual seedlings of trees and shrubs should be introduced quickly. Use a diversity of plant / tree species. Such sites would need regular monitoring.
- *If deer browse is likely,* fencing may be required to protect reforestation³.
- *Use site-appropriate native plants and invasive-free materials:* Native plants will encourage native insect life, thus wildlife as well. If in competition with invasive plants, select ones that will put up a good fight with the invasive plants.
- *Choose a diversity of plants or seeds that comprise the natural community* associated the restoration site; locally sourced plant material is more likely to succeed.
- *Limit the introduction and spread of invasive plants during restoration:* Site preparation and restoration efforts may inadvertently introduce new invasive plants. Be alert and minimize this possibility by:
 - minimizing ground disturbance, revegetate to optimize native plant establishment for the site;
 - limit the disturbance beyond the treated area;
 - avoid damaging healthy vegetation in the treated area;
 - *Beware of fill and mulch:* Both materials can be infested with invasive plant seeds. If mulch is needed, be certain it is weed-free. Mulch may not be necessary, if a cover crop is used. Visit the source of any sand, gravel or other soil to check for invasive plant materials.
 - Bare root plants may reduce problems of imported weed seed.
- Monitor the restoration area a few months after work has been done, to be certain that it is effective, and then annually thereafter.

Monitoring

Monitor on annual basis: trails, stream corridors and roads that border or cross the site. Record location of any invasive plants using GPS (and/or flagging) on maps and annual monitoring reports.

If invasive plant removal and restoration has been done recently, annually check the work area for resprouts or seedling invasive plants that emerge from the seed bank. Be certain that the area still has protected vegetation that is still healthy, and the work area is well vegetated.

PLAN for treatment of Invasive Plants at Goodwin Tract (*DRAFT* Oct 2019)

- Locate and flag invasive plants near old homestead. [fall 2019]
- Organize group effort to dig out the stumps of barberry and honeysuckle in spring, soon after ground is thawed and soil is still wet. [April / May 2020]
- On Tunnis Road, treat with herbicide (3% glyphosate) the coltsfoot in **late fall** -- in spring, prevent flowers if possible. Coltsfoot has started to invade next to road towards wetlands and stream. Need permit for this treatment. [ideally late fall 2019]
- Monitor spread of coltsfoot at Goose Pond Rd parking area. Consider smothering some of it. [2020]

MONITORING DEER BROWSE

Along with monitoring for invasive plants, Stewardship Team should be looking out for sign of excessive deer.

Monitor for excessive deer browse, as excessive deer browse is a threat to forest health and regeneration. Even though the Town Forest is not showing much sign of deer browse at this time, establish a base line using a monitoring protocol such as Trillium station, the Rawinski ten-tallest sapling approach or a change in Canada mayflower leaf density on assorted Mayflower plots. Look for large areas with ferns (especially new york or browse on preferred woody plants such as hobblebush or other viburnums, dogwoods. Look for stump sprouts that don't reach sapling height.

or hedging of oak or maple saplings. If there are few maple or oak saplings, then an exclosure and marked control plots of Trillium should be considered as is done elsewhere in town.

¹ Best Management Practices for the Prevention and Treatment of Terrestrial Invasive Plants in Vermon Woodlands, The Nature Conservancy / Vermont (2011)

² <http://www.vtinvasives.org>- check the *treatment* methods described for each plant. This is based on phenology periods for each plant.

Control of Invasive Plants, NH. This is a compressed summary of treatment for listed invasive plants. Plants on the watch list, such as colt's foot, are not mentioned in this document, but watch-list plant treatment by herbicide is permitted by new NH herbicide rules.

<https://www.agriculture.nh.gov/publications-forms/documents/control-invasive-species-numbers.pdf>

³ Article on regenerating hardwood forests can be downloaded as PDF file from this webpage:

<https://extension.psu.edu/regenerating-hardwood-forests-managing-competing-plants-deer-and-light>