



207 Forestry Consulting Services, LLC

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207-431-6153

Paul L Larrivee, Jr. LF 3306

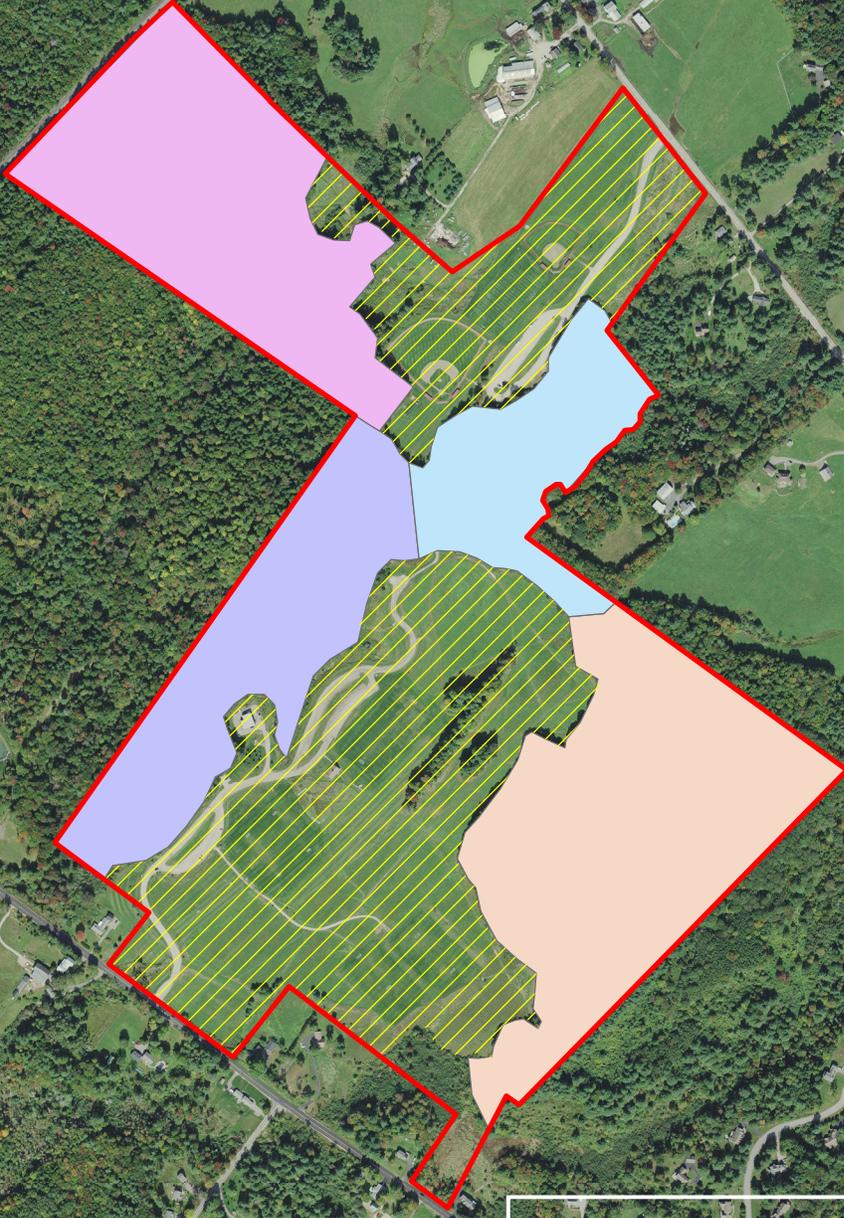
Invasive Plant Control Practice Plan



Landowner: Town of Cumberland
Town: Cumberland
County: Cumberland
Parcel: Twin Brook Recreation Area
Tax Map: R04 Lot 13
Total Acreage: 222.3+/- acres
Surveyed Acreage: 130+/- acres
Forested Acres: 123+/- acres
Date: June 7, 2023

Map prepared by: 207 Forestry Consulting Services, LLC
Paul Larrivee, Jr. LF 3306
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Town of Cumberland
Twin Brook Parcel
Cumberland, Maine
Cumberland County
Map R04 Lot 13



Legend

- Twin Brook Boundary (222.3 acres)
- Twin Brook Open Areas (99.3 acres)
- Twin Brook Compartment 1 (36 acres)
- Twin Brook Compartment 2 (17 acres)
- Twin Brook Compartment 3 (44 acres)
- Twin Brook Compartment 4 (26 acres)
- Twin Brook Wetland Preservation Area 4+/- acres

Map Prepared by: Paul Larrivee, Jr. LF 3306
April 29, 2023
Not a legal boundary survey

Town of Cumberland
Twin Brook Parcel
Cumberland, Maine
Cumberland County
Map R04 Lot 13



Legend

-  Twin Brook Invasive Plant Recon
-  Twin Brook Boundary (222.3 acres)

Map Prepared by: Paul Larrivee, Jr. LF 3306
April 29, 2023
Not a legal boundary survey

+ Create Record

✳ Go To Record

🌿 Filter Records

📏 Identify/Measure



Maxfield Brook

Windle Brook

Windle Brook

river



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Property Overview

The Twin Brook Recreation Facility is a partially developed recreation facility with a forest component. The property is approximately 222 acres in size, of which approximately 123+/- acres are forested. The property is located between Tuttle and Greely Roads completely in the Town of Cumberland, Cumberland County, Maine. The property also abuts the railroad corridor. Access to Twin Brook is sufficient from Greely Rd. or Tuttle Rd. on existing access roads that currently provide public use and maintenance services. The most recent harvests accessed from the abutters parcel on Mustang Ln.

Portions of the Twin Brook Parcel have a major invasive plant issue with Buckthorn dominating. The area surrounding the dog trail is overrun with Buckthorn and Honey Suckle. The most recent harvest areas have scattered invasive plants that should be addressed immediately. Other areas of dense plants and scattered individuals exist across the entire parcel, especially along the field edges. Timber harvesting should be paused until a plan to tackle the invasive issue is developed. I believe that any plan will involve mechanical and chemical treatment in order to begin the treatment of this issue.

Survey Description and Summary of Survey Effort

207 Forestry staff visited the property on several occasions in May and spent many hours surveying the forest and uploading data to IMap software (see Map). This was a fairly thorough search that began by mapping individual plants, but the decision was made to map polygons of heavily infested areas as the understory is full of multiple species of invasive plants. The survey area was roughly 130 acres.

Description of Invasive Plants Found

In my survey of the woodland, I found infestations of six invasive plants (see maps and Table 1). The field edges are almost all entirely infested. Compartment 1 (see map) has scattered plants adjacent to the Wilderness Trail. Compartment 2 (home of the Dog Trail), is completely infested with Glossy Buckthorn and Honeysuckle. Compartment 3 (home of the Morton, Hill and Inner Loop Trails) has a few areas of heavy infestation but mostly has scattered clumps and individual plants along the trails. Compartment 4 (home of the Brook, Ravine and Paved Trails) has areas of wetter soils that are heavily infested and areas along the Ravine Trail that have scattered clumps of plants.

These invasive shrubs have the potential to suppress tree recruitment and growth in forests, crowd out beneficial native plants, reduce wildlife habitat quality, and generally be a nuisance during property maintenance.

I did not witness any attempts to eradicate or manage any of the invasive plants at Twin Brook.



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Below we present Table 1 summarizing our findings, as well as prioritized management recommendations in Table 2.

Common name	Scientific name	Growth	Level of infestation	Area where found
Glossy Buckthorn	Frangula alnus	Shrub	High in Areas	Entire Parcel (See map)
Asiatic Bittersweet	Celastrus orbiculatus	Shrub	High in Areas	Along field and open edges (See map)
Multiflora Rose	Rosa multiflora	Shrub	High	Along field and open edges (See map)
Shrubby Honeysuckle	Lonicera morrowii	Shrub	High Low	Compartment 2,4 Compartment 1,3 (see map)
Japanese Knotweed	Euonymus alatus	Shrub	Low	Scattered individual plants near baseball fields
Japanese Barberry	Berberis thunbergii	Shrub	Low	Compartment 1

Explanation of Prioritization Strategy

Prioritization is helpful because it is not usually realistic to remove every invasive plant from every acre of land. In general, the highest priority in invasive plant management is prevention – keeping new species out. After invasive plants become established, invasive plant management follows a three-tiered prioritization, see below. On the Twin Brook Parcel the invasive plant species fall into either in #1 (low presence on the property), #2 (moderate presence on the property) or #3 (high presence).

1. Early Detection and Rapid Response to eliminate species which are new to the area or only present in small patches. Goal is eradication from the site. Hopefully can be achieved over a short timeframe (several years). This could take place on the majority of the Compartment 1 and portions of Compartment 3. Best return on treatment investment. Imap software should be used to document additional plant locations and completed treatment of invasive plants.



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2. Early Management to control modest patches of more common invasive plants. Goal is to expand the “clean” habitat and prevent it from being re-infested through monitoring over time. This work may need to be repeated every several years (2-5 year interval) if there are nearby sources of propagule pressure. Areas of special concern (important timber resources, rare/exemplary natural features, special wildlife habitats) may be targeted first or more often. This could take place in portions of Compartment 4
3. Suppress and contain areas of dense infestation. Goal is to reduce the spread of seeds or other plant propagules and prevent the infestation from expanding. This is ongoing, maintenance work which is repeated every several years or as resources permit, e.g., simply cutting down large shrubs every 5-10 years. Infestations near areas of special concern may receive more frequent or more intense attention. If a species is expanding from an area considered “the motherlode,” (densest aggregation of mature plants) the general practice is to recommend working from the outside in to control outliers/the advancing front, while at the same time (if possible) suppressing the motherlode to prevent additional seed production. This would take place on Compartment 2 and small patches of Compartments 3 and 4.

Prioritized Management Recommendations

The treatment suggestions outlined here are considered highly effective approaches to the specific infestations found (1 = highest priority). Other options may also be effective or preferable in certain scenarios.

1. Review ways that new plants might arrive and be vigilant. [GOAL: Prevent new invasions.] Require that equipment (e.g., logging, earth-moving) be cleaned before it comes to the property. This will remove seeds or plant fragments which could otherwise spread from the last job to your property. Also, be careful with fill, hay, or mulch – all these can carry weed or invasive plant seeds. Monitor any areas where fill, hay, or mulch are applied for 1-2 years afterwards, to make sure nothing undesirable sprouts. Last but not least, be careful with your boots and personal gear. If you are returning to your property from another site that may be infested with invasive plants, be sure to clean your boots carefully and brush off your pant legs, etc. at the site before getting in your vehicle and driving home to your property! This will reduce the chance that seeds can hitchhike home to your forest. Also, have discussions with dog walkers about seed transport. This may be an educational opportunity with scattered signs at the trail entrances about seed transport and invasive plants.
2. Eradicate species in low abundance. [GOAL: Eliminate several species while it is still relatively simple to do so.] Japanese Barberry, Glossy Buckthorn, Japanese Knotweed and honeysuckle are present at low or very low levels in Compartment 1 and 3, and therefore should be relatively simple to eradicate from the property with modest investment of time and resources. Left untreated, these will spread and become larger infestations that will be much more difficult to control. Repeated manual cutting/pulling can work on isolated plants, if this is regularly followed up to cut back re-sprouts. Try to cut the plants 3X within 2 growing seasons. We recommend



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flagging each plant so that it is easier to re-locate for follow-up. Herbicide treatments can also be effective, but due to the modest extent of the populations, may not be necessary if the landowner is diligent and thorough. Even herbicide treatments must be followed-up to address survivors.

3. Suppress infestations of more abundant and widespread species. [GOAL: Release native forest trees and understory plants from competition and improve wildlife habitat by suppressing growth, while recognizing that a significant seed bank exists and eradication is unlikely.] High infestations of glossy buckthorn and honeysuckle threaten forest tree regeneration and reduce the wildlife habitat value of the forest understory. It is unrealistic to expect to be able to find and kill all plants once this level of infestation is reached. However, an intense bout of mechanical and chemical treatment can kill large plants, buying time for the forest to grow and develop relatively free from invasive plant pressure. Repeating the treatment once every ~10-15 years, or when invasive shrubs again come to be noticeable, can help achieve forestry objectives while also improving conditions for wildlife. Successful suppression of these infestations will probably require additional herbicide treatment as some plants are large and the area infested is significant. This will likely be the only course of action for the entire Compartment 2 and portions of Compartments 3 and 4.

Notes on Using Herbicide

Successful suppression of infestations will probably require the continued use of herbicide treatments as some plants are large and the area infested is significant. I recommend hiring a licensed professional herbicide applicator. The method that uses the least amount of herbicide molecules is foliar treatment using low concentration herbicide solutions. For larger shrubs too tall to spray (the leader must be sprayed or the treatment will not succeed; it is also dangerous to spray over your head), a basal bark or cut stump treatment may be used, but this requires much more concentrated solution and can actually use more molecules of active ingredient than a dilute foliar spray. In general, foliar spray is the most effective method of treating shrubs and trees with small diameter stems.

Glyphosate or triclopyr are the most commonly used herbicides for invasive plant control; triclopyr works best in the spring and mid-summer when plants are actively growing, while glyphosate works best in mid-late summer and early fall when plants are sending materials down to the roots. Glyphosate and to a lesser extent triclopyr are available in forms you can purchase “over the counter” at a local garden center. Both herbicides are short-lived and not mobile in soil. As with any herbicide, proper technique is required to minimize collateral damage and ensure applicator safety.

Pay close attention to the herbicide concentrations listed in the product label, the required personal protective equipment, and the timing of application. Do not spray plants when they are flowering as beneficial insects may be visiting. Do not use herbicide during a drought as plants will not take up the product well and it will not be effective. Also, remember that with herbicide use, more is not always better – use the minimum recommended concentration first and see if it does the job. Note also that some



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herbicides may require the addition of a surfactant (often true for foliar applications). Read and follow all label instructions if using herbicide yourself; The Label is The Law. Note there are special restrictions on the use of herbicide in or near any wetland or waterbody. If you have any questions about herbicide use, contact the Maine Board of Pesticides Control: 207-287-2731; pesticides@maine.gov and online at <http://www.maine.gov/dacf/php/pesticides/index.shtml>

With multiple brooks and a stream, permitting from the Maine DEP, Board of Pesticide control, or the Town of Cumberland for pesticide application will need to be researched.

Invasive plants to watch out for (not found but appropriate habitats are present)

- Black swallowwort (field edges and sunlit forest understory)
- Garlic mustard (damp areas, forest understory)
- Burning Bush (in or near woods esp. near roads and dwellings)
- Norway maple (in or near woods esp. near roads and dwellings)

Table 2. Five Year Suggested Management Timeline

Year	Task	Time of Year	Responsible Party
2023	Present plan to Council and Staff. Determine amount of staff labor available for invasive work		Forestry Committee
2024	Hand cut of larger stems in Compartment 1 & 3. Try several cuts in one growing season. Cut stem herbicide treatment can be utilized as well.	Cut 3 times during two growing seasons. A cut surface herbicide can be utilized other than during spring sap flow	Landowner
2024	Herbicide treatment by licensed applicator. Foliar application of buckthorn, knotweed, bittersweet, multiflora rose and honey suckle along field edges and denser populations of Compartments 3 & 4.	During the growing season with exact timing TBD based on treatment method(s) and active ingredient(s)utilized	Licensed Applicator or staff



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2024	If the forestry mulcher is available, field edge invasives could be ground. This should only be done in conjunction with a planned follow up foliar application.	After growing season	Staff
2025	Assess the success of herbicide treatment in 2024. Re-treat any re-sprouts. Likely knotweed areas will need to be retreated. Hand cut sprouts again that were cut in 2024 in compartment 1 and 3.	Monitor regrowth and spread during growing season. Treat as needed during growing season.	Staff and/or committee members.
2025	Depending on the success of earlier work, a foliar application could be completed of the 17 acres of Compartment 2.	Lower priority than the rest of property. Early growing season foliar application	Staff or hired contractor
2026	Monitor all invasive plants previously treated. Monitor remainder of property for presence of invasive plants.	Monitor regrowth and spread during growing season.	Staff or committee members.
2026	Assess the success of herbicide treatment in 2024 and 2025. Re-treat any re-sprouts in Compartment 3 and 4 with foliar application. If compartment 2 was treated in 2024, examine results.	Monitor regrowth and spread during growing season. Treat as needed during growing season.	Staff, committee members, hired contractor
2027	Monitor all invasive plants previously treated. Monitor remainder of property for presence of invasive plants.	Monitor regrowth and spread during growing season.	Staff and committee members
2027	Assess the success of herbicide treatment in 2024 and 2025. Re-treat any re-sprouts with a foliar application	Monitor regrowth and spread during growing season. Treat as needed during growing season.	Staff, committee members and possibly hired contractor



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2028	Monitor all invasive plants previously treated. Monitor remainder of property for presence of invasive plants. Update and modify the treatment program.	Monitor regrowth and spread during growing season.	Landowner
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Annually the lot should be traversed and examined for new invasive plant locations as well as treatment results. Monitoring Invasive Plants should utilize IMap software as a tool. New plants should be flagged with ribbon and locations noted in IMap. All treatment should be noted in IMap to help determine success or failure of past treatments.