

Non-Native Invasive Plant Assessment

For

Saint-Gaudens National Historic Site

Cornish, NH

Redstart Forestry
Bill Musson, Ben Machin, Markus Bradley

TABLE OF CONTENTS

I.	Introduction	p. 3
II.	Levels of Infestation – Definitions	p. 4
III.	Table 1. Non-Native Invasive Species Codes	p. 5
IV.	Minimal Infestations	p. 6 - 10
V.	Light Infestations	p. 11 - 14
VI.	Moderate Infestations	p. 15 - 25
VII.	Heavy Infestations	p. 26 - 33
VIII.	Map of NNIP Stands	p. 34
IX.	Proposed Treatment Table	p. 35

Introduction

The purpose of this project was to inventory and assess non-native invasive plant (NNIP) infestations at Saint-Gaudens National Historic Site in Cornish, New Hampshire, including the recently acquired Blow-Me-Down Farm property, as well as to recommend treatments and estimate the potential labor involved in treatments.

The assessment work was carried out by Bill Musson from Redstart Forestry, as well as Dustin Clark and James Lytton from the Student Conservation Association on August 22 and August 23, 2017. Data was collected by walking along parallel transects 200 feet apart and recording information about each infestation of NNIP. The crew deviated from transects to collect data where there were obvious areas of concern to accomplish a more complete inventory. Information recorded included percent cover of NNIP, species, relative abundance, level of infestation, water resources, cover type, canopy closure, terrain, and management recommendations. Waypoints were recorded during the assessment to aid in stand delineation.

A map was created showing the property divided into four colors based on the level of infestation. The levels are 'Minimal', 'Light', 'Moderate', and 'Heavy'. Each area is then divided into separate stands based on major differences in cover type, water resources, or spatial location. For example, every stand labeled with a '1' has a minimal infestation of invasive plants, but the separate stands are called '1A', '1B', '1C', and so on.

To estimate the time involved with treatment, several factors were considered, including size of stand, level of infestation, invasive plant species present, recommended methods of treatment, water resources, and terrain.

Levels of Infestation – Definitions

Minimal Infestation

Very few scattered invasive plants, mostly individuals, were found in these areas. Little or no seed producing invasive plants are present.

Light Infestation

Invasive plants are low in quantity and usually fairly small in these areas. This could include some plants that are too large to pull by hand and/or small, isolated patches of seedlings, saplings, shrubs, or vines.

Moderate Infestation

Invasive plants are becoming established in medium to large groups or areas and beginning to have a significant effect on plant species composition. A few plants too large to effectively spray with herbicide may be found in these areas.

Heavy Infestation

Invasive plants are well established in these areas. One species or a mix of species has taken over an area and is seriously threatening the ability of native plants to regenerate or grow. Invasive plants are sometimes too large to effectively spray with herbicide, and in most cases, they are also producing significant amounts of seed.

Table 1. Non-native Invasive Plant Species Codes

Species code	Latin name	Common name
ACPL	<i>Acer platanoides</i>	Norway maple
AEPO	<i>Aegopodium podagraria</i>	goutweed
ALPE	<i>Alliaria petiolata</i>	garlic mustard
BETH	<i>Berberis thunbergii</i>	Japanese barberry
CEOR	<i>Celastrus orbiculatus</i>	Asiatic bittersweet
ELUM	<i>Elaeagnus umbellata</i>	autumn olive
EUAL	<i>Euonymus alatus</i>	burning bush
EUEU	<i>Euonymus europaeus</i>	spindle tree
FRAL	<i>Frangula alnus</i>	glossy buckthorn
LOMO	<i>Lonicera spp.</i>	honeysuckle
LYSA	<i>Lythrum salicaria</i>	purple loosestrife
POCU	<i>Polygonum cuspidatum</i>	Japanese knotweed
RHCA	<i>Rhamnus cathartica</i>	common buckthorn
ROMU	<i>Rosa multiflora</i>	multiflora rose
ROPS	<i>Robinia pseudoacacia</i>	black locust
SYRE	<i>Syringa reticulata</i>	Japanese tree lilac*
VINI	<i>Vincetoxicum nigrum</i>	black swallow-wort

* Japanese tree lilac (*Syringa vulgaris*) is a non-native invasive plant commonly used for landscaping. The species will be treated as invasive on the SAGA property, except for the small area of mature plants between the cut-flower garden and Aspet, Saint-Gaudens' home. Those plants will be preserved.

Minimal Infestations

Stand 1A: HILLSIDE SOUTH 5.41 acres

INVASIVE PLANT SPECIES		
Spp. Code	Description / notes	Proposed Treatment
NONE FOUND		
No treatment necessary. Monitor for NNIP, especially at the west edge of the stand closest to the road.		
WATER ON PLOT	Temporary streams.	
ACCESS	Good access from Route 12A.	
TERRAIN	Steep hillside.	
POISON IVY	No	

Description: This stand is located at the south end of the property, on the east side of Route 12A. It is a steep, west-facing slope with a mature forest cover of white pine (*Pinus strobus*), hemlock (*Tsuga canadensis*), red oak (*Quercus rubra*), and black birch (*Betula lenta*). The understory is sparse and consists of mostly scattered patches of ferns. Directly to the west of the stand is the southern end of stand 3A, which has a light to moderate infestation of LOMO, VINI, ELUM, and FRAL.

Priority: LOW

Stand 1B:

OAK-PINE-HEMLOCK

16.49 acres

INVASIVE PLANT SPECIES		
Spp. Code	Description / notes	Proposed Treatment
NONE FOUND		
No treatment necessary. Monitor for NNIP, especially near the field edge, temporary drainages, and the Blow-Me-Down Trail.		
WATER ON PLOT	Temporary streams.	
ACCESS	Good access from Blow-Me-Down trail.	
TERRAIN	Gentle to moderate slope, well drained.	
POISON IVY	Possibly some near the trail and towards the field edge.	

Description: This area is near the northwest corner of the property and is situated between the field (stand 2C) and the Blow-Me-Down brook. It is a west-facing slope that is slightly higher and drier than its surroundings, and it does not extend down the banks to the drainages. There is a mature forest cover of mainly red oak, white pine, and hemlock, as well as some beech (*Fagus grandifolia*) and black birch. The understory is sparse and mainly herbaceous.

The stand shares part of its eastern boundary with stand 3C, where there is a moderate infestation of mainly LOMO. The rest of the stand is surrounded by stand 2B, which contains a light infestation of LOMO, BETH, and ROMU.

Priority: LOW

Stand 1C: NORTHEAST 7.19 acres

INVASIVE PLANT SPECIES		
Spp. Code	Description / notes	Proposed Treatment
NONE FOUND		
No treatment necessary. Monitor for NNIP, especially along Blow-Me-Up Brook and along the northern property boundary near the neighbor's field edge.		
WATER ON PLOT	North of Blow-Me-Up Brook.	
ACCESS	Good access from the Ravine Trail or north edge of field.	
TERRAIN	Moderate slope, moist.	
POSITION IVY	No	

Description: This stand is just to the north of Blow-Me-Up Brook, which runs west into Blow-Me-Down Brook. The northern stand boundary is the property boundary. It is a south-facing hill with a moderate slope down towards the brook, and there is a mature forest cover of hemlock, red oak, and white pine. The stand shares its southern boundary with stand 2B, where there is a light infestation of LOMO and SYRE.

Priority: LOW

Stand 1D: LOWER FIELD (Blow-Me-Down Farm) 11.23 acres

INVASIVE PLANT SPECIES		
Spp. Code	Description / notes	Proposed Treatment
NONE FOUND		
No treatment necessary. Monitor for NNIP, especially along all the edges. The extensive infestation of seed-producing VINI surrounding this stand poses the greatest risk at this time. Active field management is probably the best way to prevent NNIP from encroaching.		
WATER ON PLOT	None. Less than 75' from Connecticut River in places.	
ACCESS	Good access from Blow-Me-Down Farm.	
TERRAIN	Mainly flat, floodplain field.	
POISON IVY	YES, along edges.	

Description: This stand is a relatively flat field along the Connecticut River at Blow-Me-Down Farm. It is currently being leased and was growing alfalfa at the time of the assessment. The crew did not find any NNIP during inventory, but there are moderate to heavy infestations of several NNIP species along the east, south and west edges of the field (stands 3G, 3I, 4C), and there are scattered patches of VINI along the bank to the northeast (stand 3H).

Priority: LOW
Controlling adjacent infestations and monitoring will be important.

Stand 1E:

UPPER FIELD (Blow-Me-Down Farm)

5.85 acres

INVASIVE PLANT SPECIES		
Spp. Code	Description / notes	Proposed Treatment
NONE FOUND		
No treatment necessary. Monitor for NNIP, especially along all the edges. The extensive infestation of seed-producing VINI surrounding this stand poses the greatest risk at this time. Active field management is probably the best way to prevent NNIP from encroaching.		
WATER ON PLOT	None.	
ACCESS	Good access from driveway, farm.	
TERRAIN	Mainly flat.	
POISON IVY	YES, along edges.	

Description: This stand includes a relatively flat agricultural field to the west and south of the Casino and its outbuildings (stand 3J), as well as a small strip along the driveway into the farm. The field extends to the western property boundary. Vegetation was less than knee high at the time of the assessment. It is mowed at least once a year, as it is currently leased to a farmer.

In adjacent stands there are moderate to heavy infestations of several NNIP species, of which VINI and LOMO are the most widespread and well established. There is a small connected field to the southeast, part of stand 4D, that has a heavy infestation of VINI seedlings mixed in with the grasses and other vegetation.

Priority: LOW

Controlling adjacent infestations and monitoring will be important.

Light Infestations

Stand 2A:

BLOW-ME-DOWN BROOK / POND

8.64 acres

INVASIVE PLANT SPECIES <i>(listed from most abundant to least abundant)</i>		
Spp. Code	Description / notes	Proposed Treatment
LOMO	Mid-size shrubs mainly on drier edges.	August/September: Foliar spray with Thinvert RTU 8% Rodeo.
POCU	Isolated small patches.	
LYSA	Light, scattered, mainly on northern edge of stand.	Leave as it is. Monitor for changes in future.
SITE CONDITIONS		
WATER ON PLOT	brook, pond, wetland	
ACCESS	Must access from both sides or walk through water. Good access from route 12A or Blow-Me-Down Trail, but walking is extremely difficult in the thick vegetation of the swamp. Not inaccessible, but hard to move through.	
TERRAIN	Flat, wetland / aquatic ecosystem	
POISON IVY	YES, along edges	

Description: This stand includes the Blow-Me-Down Brook and Pond, as well as the adjacent wetland communities. It is located between Route 12A to the southwest and the higher, drier ground of stand 4A to the northeast. Presently the edges of the stand are lightly infested with leggy, mid- to large-sized LOMO and isolated patches of PCU and LYSA. There are almost no invasive plants deeper into the wetland, where native plants are extremely dense and well established. In adjacent stands 3B and 4A, there are moderate to heavy infestations, as well as the entire boundary along Route 12A. The infestations are composed of mainly LOMO and VINI, as well as many other NNIP species in smaller amounts.

Priority: LOW

Wetland community seems to be doing a good job of resisting NNIP.

INVASIVE PLANT SPECIES (listed from most abundant to least abundant)		
Spp. Code	Description / notes	Proposed Treatment
LOMO	Isolated patches and individual plants, mainly next to drainages and under canopy gaps.	Hand-pull plants.
BETH	Isolated small patches and individual plants.	
SYRE	Light, scattered, mainly at the bottom of drainages and closer to Saint-Gaudens Road.	
ACPL	Mainly seedlings at the bottom of drainages and under canopy gaps. 1 cut stump found.	
AEPO	Small patches in and next to temporary drainage from Saint-Gaudens Road to bottom of ravine.	Late summer / early fall: Foliar spray AEPO near Saint-Gaudens Road with Thinvert 8% Rodeo, or spray at the same time as AEPO in adjacent stand 3A.
SITE CONDITIONS		
WATER ON PLOT	Blow-Me-Up Brook runs through north of stand. Many temporary drainages and steep ravines.	
ACCESS	Good access from Saint-Gaudens Road, field (2C), Ravine Trail, or Blow-Me-Down Trail.	
TERRAIN	Steep hillsides, ravines, temporary drainages. Moist.	
POISON IVY	Possibly some on edges.	

Description: This is the largest stand on the property, extending from the north side of Saint-Gaudens Road through steep hemlock-white pine ravines and along Blow-Me-Up Brook near the north end of the property. The stand wraps around below the higher, drier ground of stand 1B and above the heavy infestations of stand 4A along the edge of Blow-Me-Down Brook. The main cover type is mature hemlock, white pine, and some mixed hardwoods like sugar maple (*Acer saccharum*) and basswood (*Tilia americana*). The understory is mainly sparse herbaceous plants, but there are some trees and shrubs regenerating in canopy gaps and at the bottom of drainages.

This stand shares its western boundary with stand 4A, where there is a heavy infestation of LOMO, BETH, ROMU, and other plants in smaller amounts. It also shares a significant length of its border with stand 3C, which is an edge habitat that is moderately infested with mainly LOMO and VINI. The greatest risk is probably NNIP plants seeding in from the drainages below or the field edge above.

Priority: LOW

Closed canopy is keeping NNIP from establishing and/or spreading quickly.

Stand 2C: **FIELD** **8.96 acres**

INVASIVE PLANT SPECIES <i>(listed from most abundant to least abundant)</i>		
Spp. Code	Description / notes	Proposed Treatment
LOMO	Scattered small shrubs, mainly in northwest strip of field.	Hand-pull. If it does not pull: Late summer: Foliar spray with Thinvert RTU 8% Rodeo.
VINI	Isolated patches - biggest found was 4 ft. across.	Late June / early July: Foliar spray with 5% Garlon 3A and 1 gram/gallon Escort XP (water-based).
SITE CONDITIONS		
WATER ON PLOT	None	
ACCESS	Good access from Saint-Gaudens Road or historic core (3D).	
TERRAIN	Field, moderate slope, well drained, sandy.	
POISON IVY	YES, along edges.	

Description: This stand is a field to the west of Aspet and the landscaped grounds (3D). It is mowed annually in September, likely making the NNIP roots very vigorous relative to the above-ground vegetative growth. The vegetation does not appear to be especially healthy, and the soil seems to be sandy and excessively well drained. Small shrubs of LOMO are scattered through the field, although they are concentrated in the northwest section of it, a narrow east-west strip. There are some isolated patches of VINI in the field as well, which was noted along the west of the edge of the stand near the manicured lawn. The edge of the field, stand 3C, is moderately infested with LOMO, VINI, SYRE, and CEOR.

Note: Active management of the field for soil health and plant growth, including fertilization and mowing multiple times a year, is recommended as a measure to control NNIP infestations in this stand.

Priority: MODERATE
 Light infestation but close to main grounds, seed producing plants in full sun.

Stand 2D:

WHITE PINE SOUTH

4.48 acres

INVASIVE PLANT SPECIES (listed from most abundant to least abundant)		
Spp. Code	Description / notes	Proposed Treatment
BETH	Scattered small shrubs.	Hand-pull.
ACPL	One 4" cut stump found.	September/October: Cut stump with 50% Rodeo / 50% water.
SITE CONDITIONS		
WATER ON PLOT	None	
ACCESS	Good access from Saint-Gaudens Road.	
TERRAIN	Moderate / gentle slope, well drained.	
POISON IVY	No.	

Description: This stand is a narrow strip of land that is bordered on the west by stand 3A along Saint-Gaudens Road and by the property boundary to the east. The stand is dominated by white pine with a sparse understory. There were a few scattered BETH shrubs and one cut stump ACPL found. In adjacent stand 3A, there is a moderate infestation of several NNIP species that has the potential to move into this stand, especially if a canopy gap is created by natural disturbance.

Priority: LOW

Light infestation in a shaded stand, very few plants scattered.

Moderate Infestations

Stand 3A:

ROADSIDE / POWER CUT

17.12 acres

INVASIVE PLANT SPECIES		
(listed from most abundant to least abundant)		
Spp. Code	Description / notes	Proposed Treatment
BETH	Scattered individuals and very small groups.	Late May: Hand-pull ALPE and all plants small enough except VINI and AEPO. Late June / early July: Foliar spray VINI and AEPO with 5% Garlon 3A and 1 gram/gallon Escort XP (water-based) and cut stump with 50% Rodeo / 50% water. Late summer / early fall: Foliar spray all remaining plants with Thinvert RTU 8% Rodeo and 1 gram/gallon Escort XP. ***Omit Escort XP if there is water or damp soil in temporary drainages.
LOMO	Scattered individuals and very small groups.	
VINI	Small plants along road. Becoming more established in power cut.	
ACPL	Scattered seedlings.	
SYRE	Scattered seedlings, one heavier area at far northeast end of stand, 1 cut stump found.	
ELUM	Shrubs along Route 12A including one large shrub on top of the rock ledge.	
FRAL	Small number of seedlings and shrubs along Route 12A.	
AEPO	Small patch next to road where temporary drainage crosses under road.	
ALPE	Two patches of rosettes found on east side of Saint-Gaudens Road.	
SITE CONDITONS		
WATER ON PLOT	Temporary drainages	
ACCESS	Good access from Route 12A, Saint-Gaudens Road, and/or power cut	
TERRAIN	Moderate to steep hillside, road edge, moist	
POISON IVY	YES, along road edges and power cut.	

Description: This stand is a narrow strip that runs along Route 12A at the south end of the property and then extends up Saint-Gaudens road, ending finally at the road to the employee parking at SAGA. The stand also includes a section of a power cut that crosses Saint-Gaudens Road before running parallel to it. The forest cover is mainly mature white pine and hemlock with some hardwoods.

Several species of NNIP were found along the roads and the power cut, although the worst of the infestations are along the east side of Route 12A and along the power cut. Plants are well distributed

throughout the stand. The herbaceous NNIP species, AEPO and ALPE, are a priority to treat because they have the potential to spread more quickly than the woody invasive species.

Priority:

MODERATE

The power cut has the potential to get much worse quickly. The roadside is more shaded and development of the infestation is expected to be slower. NNIP are not easily visible while driving Saint-Gaudens Road, but they will be soon.

Stand 3B:**BLOW-ME-DOWN MILL****1.14 acres**

INVASIVE PLANT SPECIES		
(listed from most abundant to least abundant)		
Spp. Code	Description / notes	Proposed Treatment
LOMO	Mid- to large-sized shrubs on edge of mowed field and water.	Late June / early July: Foliar spray VINI with 5% Garlon 3A (water-based). Late summer / early fall: Foliar spray with Thinvert RTU 8% Rodeo and cut stump with 50% Rodeo / 50% water.
VINI	Along mowed field edge, producing seedpods.	
ACPL	Seedlings / saplings to the south of the mill along the brook.	
RHCA	1 cut stump found near edge of water.	
ROPS	Small saplings on north edge of lawn, 1 or 2 cut stumps found.	
SITE CONDITIONS		
WATER ON PLOT	Brook, pond, wetland.	
ACCESS	Good access from Route 12A, park at Blow-Me-Down Mill.	
TERRAIN	Relatively flat mowed field, moderate slope down to water.	
POISON IVY	YES, on edges.	

Description: This stand includes the Blow-Me-Down Mill, the small mowed field next to it, and the vegetated edges of the Blow-Me-Down Brook and Pond. It is bound by water and wetlands to the north and east (stand 2A), a heavy infestation of mainly LOMO and VINI to south (stand 4B), and Route 12A to the west. The mowed field appears to be free of NNIP, but the edge habitats are becoming overgrown with VINI and LOMO. There is at least one ROPS and one RHCA in the area that are big enough to warrant a cut stump treatment, and they are shown on the map.

Note: The field edge is dry, but considering the proximity of the water and wetland, it is recommended that only herbicides with a riparian label be used to treat NNIP in this stand.

Priority: HIGH

Considering the level of infestation, the historic significance, and the aesthetics of the stand, it is important to control the NNIP here before they get much worse. The seed-producing VINI and RHCA are of greatest concern at this time.

Stand 3C:

FIELD EDGE

6.14 acres

INVASIVE PLANT SPECIES <i>(listed from most abundant to least abundant)</i>		
Spp. Code	Description / notes	Proposed Treatment
VINI	Fairly consistent along field edge, biggest plant found was 10' across.	Late June / early July: Foliar spray VINI with 5% Garlon 3A and 1 gram/gallon Escort XP (water-based). Late summer / early fall: Foliar spray with Thinvert RTU 8% Rodeo and 1 gram/gallon Escort XP.
LOMO	Scattered shrubs and seedlings, some small patches.	
RHCA	A few seedlings found.	
SITE CONDITIONS		
WATER ON PLOT	None.	
ACCESS	Good access from field.	
TERRAIN	Edge of gently sloped field dropping off to moderate and steep slopes on all sides, well drained.	
POISON IVY	YES	

Description: This stand runs along the edge of the field (stand 2C) and along the northern boundary of SAGA's historic core (stand 3D). The infestation of NNIP is not greatly affecting the general aesthetic of the field at this time, but it is a highly visible area of the historic site with a lot of foot traffic. Invasive plants, especially VINI, are present throughout the length of the stand.

Priority: HIGH

Considering the seed-producing VINI and the amount of foot traffic the area receives, this infestation should be treated as a high priority. The poison ivy along the field edge is also a concern.

Stand 3D:

HISTORIC CORE

6.72 acres

INVASIVE PLANT SPECIES <i>(listed from most abundant to least abundant)</i>		
Spp. Code	Description / notes	Proposed Treatment
SYRE	Seedlings in hedgerows.	Hand-pull plants. Priority should be given to the CEOR and other plants along white pine hedgerow on Saint-Gaudens Road.
CEOR	Mixed into white pine hedge and beginning to overtop it in places. Stems have small diameter.	
LOMO	Small plants in white pine hedge.	
ROMU	Small plants in white pine hedge.	
ACPL	A few seedlings in white pine hedge.	
BETH	A few small plants in white pine hedge.	
SITE CONDITIONS		
WATER ON PLOT	None.	
ACCESS	Good access, plenty of parking.	
TERRAIN	Flat/gentle slope, gardens, lawn, roadside.	
POISON IVY	YES	

Description: This stand is the core attraction of the historic site. It includes the grounds around the house and the galleries, as well as the white pine hedgerow that runs along the north side of Saint-Gaudens Road.

There is a patch of mature SYRE that is significant seed source. The white pine hedge between the field and the road has some CEOR becoming to overtop it, as well as small plants of several other NNIP species.

Note: The SYRE and PONI planted on the grounds may have historic significance.

Priority: HIGH

Considering that this is the main attraction for most SAGA visitors, controlling NNIP is a high priority. The CEOR in the white pine hedge is also a high priority because it will take over the hedge if left untreated.

Stand 3E:

MAINTENANCE / SAGA FARM

7.55 acres

INVASIVE PLANT SPECIES <i>(listed from most abundant to least abundant)</i>		
Spp. Code	Description / notes	Proposed Treatment
SYRE	Scattered seedlings and small patches on edges and in the woods.	Hand-pull plants. August/September: Foliar spray POCU and AEPO with Thinvert RTU 8% Rodeo.
LOMO	Some shrubs on edges.	
ROMU	Small plants on edges.	
BETH	Small plants on edges.	
RHCA	Small plants on edges.	
POCU	Small patch on east side of permanent stream near SAGA farm buildings.	
AEPO	Small patch at intersection of Saint-Gaudens Road and the Maintenance Drive.	
SITE CONDITIONS		
WATER ON PLOT	Permanent stream running northwest through the stand, to the east of the gravel road. Temporary drainage in woods to the northeast of buildings.	
ACCESS	Good access, plenty of parking.	
TERRAIN	Gentle slope.	
POISON IVY	YES	

Description: This stand includes Maintenance/Collections Storage, the historic Saint-Gaudens Farm buildings, and a few acres of the surrounding forest. The stand boundary is the same as the property boundary along most of the south side, and part of the northern stand boundary runs along Saint-Gaudens road. There are few large NNIP plants here, but the variety of species listed above is becoming established, especially along the forest edge.

Priority: MODERATE

Considering its proximity to the main grounds, the number of species growing here, and the presence of POCU and AEPO, this area should be treated as a mid-level priority.

Stand 3F:

FIELD / NURSERY

4.45 acres

INVASIVE PLANT SPECIES <i>(listed from most abundant to least abundant)</i>		
Spp. Code	Description / notes	Proposed Treatment
LOMO	Small- to medium-sized shrubs along the field edge and in the woods. Some growing in full sun and producing a significant amount of fruit.	Communicate with neighbors before any control work. Late summer / early fall: Foliar spray with Thinvert RTU 8% Rodeo and 1 gram/gallon Escort XP. ***Omit Escort XP near the stream and pond in southwest corner of stand.
ROMU	Small- to medium-sized shrubs along the field edge and some in the woods.	
RHCA	Small- to medium-sized plants along the field edge.	
CEOR	A few plants found along the southern field edge.	
ELUM	One or two plants found next to the pond.	
SITE CONDITIONS		
WATER ON PLOT	Permanent stream and pond in southwest corner of stand.	
ACCESS	Good access from employee parking or Saint-Gaudens Road.	
TERRAIN	Gentle slope, field, field edge.	
POISON IVY	YES, on edges.	

Description: This stand includes the field, hemlock nursery, and Saint-Gaudens Farm living quarters at the easternmost part of SAGA, south of Saint-Gaudens Road. There were little to no NNIP found in the mowed field or the nursery, but the edges are becoming established with multiple woody invasive plants in various stages of development.

Note: It would be prudent to contact the landowner who owns the field directly to the east of this stand before any control work is done, because a lot of the NNIP infestation is growing along that property boundary.

Priority: HIGH

The field edges are growing a variety of NNIP species, many of which are receiving plenty of direct sunlight and producing seed. This area has the potential to become overrun with invasive plants if not controlled.

Stand 3G: ISLAND NORTH / ISLAND SOUTH (Blow-Me-Down-Farm) 1.68 acres

INVASIVE PLANT SPECIES <i>(listed from most abundant to least abundant)</i>		
Spp. Code	Description / notes	Proposed Treatment
LOMO	Medium-sized plants, moderate to heavy on edges, heaviest on the west edge of Island South.	Late June / early July: Foliar spray VINI with 5% Garlon 3A and 1 gram/gallon Escort XP (water-based). Late summer / early fall: Foliar spray with Thinvert RTU 8% Rodeo and 1 gram/gallon Escort XP.
VINI	Moderate to heavy on edges, producing seed.	
ROMU	A few large, spreading shrubs, some smaller plants.	
BETH	Few scattered individuals on edges and in the woods.	
RHCA	Seedlings around edges, one bigger plant found is a cut stump possibility.	
ELUM	A few plants along edges.	
EUAL	One or two plants found in Island North.	
SITE CONDITIONS		
WATER ON PLOT	Some damp soils at bottom of slope in Island South.	
ACCESS	Good access from fields at Blow-Me-Down Farm.	
TERRAIN	Moderate slope, field edges, generally well drained.	
POISON IVY	YES	

Description: This stand consists of two groups of trees, or ‘islands’ in the fields at Blow-Me-Down Farm. The trees are mostly mature hardwoods, although there are some softwoods in Island North. There is a long, steep bank between the upper and lower fields (stand 3H) that has a moderate infestation of VINI. Although there are several species of NNIP, the VINI is producing a lot of seed and has the potential to become a very heavy infestation soon if left untreated. The worst part of the infestation is along the west edge of Island South.

Note: It is recommended that any NNIP control work be carried out in coordination with the farmers managing the fields to avoid contamination of crops and other potential problems.

Priority: MODERATE

There is a mix of NNIP species becoming well-established along the edges of this stand. VINI, RHCA, and LOMO are of greatest concern at this time. Many plants in these tree ‘islands’ are producing seed and have the potential to spread into the fields and the larger forested areas. Although this stand needs attention, the intensity of some of the other infestations at Blow-Me-Down Farm should take priority over this.

Stand 3H:

MIDDLE BANK (Blow-Me-Down-Farm)

2.05 acres

INVASIVE PLANT SPECIES (listed from most abundant to least abundant)		
Spp. Code	Description / notes	Proposed Treatment
VINI	Scattered mats mixed in with grasses and other vegetation, many producing large amounts of seed.	Late June / early July: Foliar spray with 5% Garlon 3A and 1 gram/gallon Escort XP (water-based).
SITE CONDITIONS		
WATER ON PLOT	None.	
ACCESS	Good access from fields at Blow-Me-Down Farm.	
TERRAIN	Moderate to steep bank with tall herbaceous vegetation between farm fields.	
POISON IVY	YES, a small amount.	

Description: This stand is a long, narrow, south-west facing bank with a moderate to steep slope, situated between the two largest fields at Blow-Me-Down Farm (stands 1D and 1E). The bank is likely mowed once a year considering the lack of woody plants. VINI is scattered throughout the stand forming mats, although it is still quite patchy. The vines were producing a high number of seedpods during the assessment.

Note: It is recommended that any NNIP control work be carried out in coordination with the farmers managing the fields to avoid contamination of crops and other potential problems.

Priority: HIGH

This is a healthy infestation of an aggressive plant growing in the full sun and producing large quantities of seeds. VINI has the potential to spread easily through the open land, and any mowing could potentially expedite that process by scattering seeds.

Stand 3I: HARDWOOD SOUTH (Blow-Me-Down-Farm) 3.70 acres

INVASIVE PLANT SPECIES		
(listed from most abundant to least abundant)		
Spp. Code	Description / notes	Proposed Treatment
SYRE	Two large cut stump plants near the brook, as well as seedlings scattered nearby.	Late May: Hand-pull ALPE. Late June / early July: Foliar spray VINI with 5% Garlon 3A (water-based) and cut stump with 50% Rodeo / 50% water.
VINI	Some on the steep bank and scattered small plants underneath ostrich ferns in the floodplain.	
LOMO	Small- to medium-sized shrubs on bank and some scattered in floodplain.	
ACPL	Some seedlings found in the northern part of the stand.	
ALPE	Small area of basal rosettes found in the northern part of the stand.	
SITE CONDITIONS		
WATER ON PLOT	Some damp soils at bottom of slope in Island South.	
ACCESS	Good access from fields at Blow-Me-Down Farm.	
TERRAIN	Moderate slope, field edges, generally well drained.	
POISON IVY	YES	

Description: This stand is located at the southeast edge of Blow-Me-Down Farm along the Blow-Me-Down Brook. It is a steep, southeast-facing slope that drops to a floodplain, and there is a mature cover of hardwoods. Ostrich fern (*Matteuccia struthiopteris*), nettles (*Urtica dioica*), Joe-Pye weed (*Eutrochium purpureum*), and other native plants have formed a dense vegetative cover in the floodplain and seem to have slowed the establishment of NNIP to a certain extent.

Heavy infestations to the north and south in stands 4C and 4D are likely the source of this infestation, and conditions will continue to worsen if the stand is left untreated.

Note: Most of this stand is in a floodplain, and it is recommended that only herbicides labelled for riparian use be used in this stand.

Priority: MODERATE

Although there is a mix of NNIP species becoming established, the infestation is not severe, and treating the heavy infestations in adjacent stands should take priority over this stand.

INVASIVE PLANT SPECIES		
(listed from most abundant to least abundant)		
Spp. Code	Description / notes	Proposed Treatment
VINI	At the base of almost every large tree, all along the north, east, and south edges of the stand.	Late June / early July: Foliar spray VINI and CEOR with 5% Garlon 3A and 1 gram/gallon Escort XP (water-based). Late summer / early fall: Foliar spray with Thinvert RTU 8% Rodeo and 1 gram/gallon Escort XP.
LOMO	Shrubs of various sizes around bases of mature trees and a couple of individuals in field to the west of the big red barn.	
RHCA	Seedlings around the base of mature trees.	
CEOR	Found in the group of trees to the northwest of the Dance Hall.	
BETH	A few small plants scattered.	
SITE CONDITIONS		
WATER ON PLOT	None.	
ACCESS	Good access, drive in from Route 12A.	
TERRAIN	Relatively flat, some gentle slopes, well drained.	
POISON IVY	YES	

Description: This stand encompasses the lawns and gardens around the Blow-Me-Down farmhouse and its associated outbuildings. There are many large, mature, trees in the landscape, and the bases of these are the most heavily infested with NNIP. VINI is widespread, producing seeds, and is very heavy in the adjacent stand 4D as well.

Note: The farm is used for events and the adjacent farm fields are currently leased to farmers. It is recommended to coordinate with the National Park Service and those managing the fields while planning for any herbicide use in this stand. Since the farm is used for public events, the poison ivy is also a concern.

Priority: HIGH

The farm is becoming overrun with a variety of invasive species, although VINI is of the greatest concern. This is an area used for public events and is full of the type of edge habitat that many invasive species thrive in. It is important to control NNIP in this stand and the adjacent stand 4D.

Heavy Infestations

Stand 4A:

WETLAND EDGE

8.83 acres

INVASIVE PLANT SPECIES <i>(listed from most abundant to least abundant)</i>		
Spp. Code	Description / notes	Proposed Treatment
LOMO	Moderate to heavy along edge of wetland, heaviest in the central part of the stand.	Late June / early July: Foliar spray VINI with 5% Garlon 3A (water-based). Late summer / early fall: Foliar spray with Thinvert RTU 8% Rodeo and cut stump with 50% Rodeo / 50% water.
VINI	Increasing in severity from north to south, well established near Blow-Me-Down Mill.	
RHCA	4 cut stump plants were found, as well as scattered seedlings, mostly near the large plants.	
ACPL	One cut stump found, seedlings and saplings on both sides of water near Blow-Me-Down Mill.	
SYRE	One cut stump found, few smaller plants found.	
BETH	Scattered individuals, mostly in the central part of the stand.	
ROMU	Light infestation concentrated in central-southern part of stand.	
POCU	One patch less than 20' wide in wetland next to brook.	
LYSA	Some scattered plants, mostly in the central part of the stand.	Leave as it is. Monitor for changes in future.
SITE CONDITIONS		
WATER ON PLOT	None.	
ACCESS	Good access from Blow-Me-Down Trail, Blow-Me-Down Mill, Route 12A.	
TERRAIN	Moderate slope down to flat, wet.	
POISON IVY	YES	

Description: This stand follows the edge of the forest (stand 2B) and the wetland (stand 2A), running somewhat parallel to Blow-Me-Down Brook. The central and southern sections of the stand are heavily infested with mainly LOMO and VINI, some cut stump individuals of SYRE, RHCA and ACPL, and

other scattered NNIP species. An isolated patch of POCU is in the stand. The northern part of the stand only has light to moderate infestations of LOMO, but there are seed sources for LOMO, POCU, ROMU, and SYRE outside of the stand (and SAGA property) to the north.

Note: This entire stand is either in or close to water or a wetland. For this reason, only herbicides that are labelled for riparian use should be used in this stand.

Priority: HIGH

This is an edge habitat between forest and wetland, which is one of the prime places for NNIP to become established. There are 9 species of NNIP in this stand, and some are becoming very well established while producing seeds. The level of infestation, as well its proximity to hiking trails and moving water, makes treating this stand a high priority.

Stand 4B:

CORNER 12A / SAINT-GAUDENS RD.

2.42 acres

INVASIVE PLANT SPECIES <i>(listed from most abundant to least abundant)</i>		
Spp. Code	Description / notes	Proposed Treatment
VINI	Heavy on edges and under canopy gaps, producing a lot of seed.	Late June / early July: Foliar spray VINI and AEPO with 5% Garlon 3A and 1 gram/gallon Escort XP (water-based).
LOMO	Moderate to heavy on edge.	
BETH	Scattered small- to medium-sized plants.	
ACPL	One cut stump found, some seedlings.	Late summer / early fall: Foliar spray with Thinvert RTU 8% Rodeo and 1 gram/gallon Escort XP and cut stump with 50% Rodeo / 50% water.
AEPO	Light infestation running along drainage ditch on 12A for less than 50’.	
SITE CONDITIONS		
WATER ON PLOT	None.	
ACCESS	Good access from Route 12A, Saint-Gaudens Road.	
TERRAIN	Moderate slope above, gentle slope closer to the roads.	
POISON IVY	YES	

Description: This stand is situated on the corner of Route 12A and Saint-Gaudens road, south of stand 4A and northwest of stand 3A. It includes some mixed forest cover, as well as a small mowed area at the north of the stand, near the stone bridge. The edges of heavily infested with mostly VINI and LOMO, although a 9" DBH ACPL is providing a seed source as well.

Note: This stand is very visible to SAGA visitors and passersby, which should be taken into consideration when planning and timing NNIP treatments.

Priority: HIGH

This stand includes moderate to heavy infestations, has a lot of edge habitat that NNIP species thrive in, and is seen by many people on a daily basis. It is a high priority to treat NNIP in this area.

Stand 4C:**CONNECTICUT RIVER EDGE****3.28 acres**

INVASIVE PLANT SPECIES		
(listed from most abundant to least abundant)		
Spp. Code	Description / notes	Proposed Treatment
LOMO	Consistent small- to large-sized plants along edge facing field.	Late June / early July: Foliar spray VINI and AEPO with 5% Garlon 3A and 1 gram/gallon Escort XP (water-based). ***Omit Escort XP on edge facing river. August/September: Foliar spray with Thinvert RTU 8% Rodeo with 1 gram/gallon Escort XP.
VINI	Moderate infestation along most of the field edge.	
RHCA	Mostly small scattered plants.	
BETH	Scattered small plants.	
ACPL	A light infestation in the southern section of the stand.	
POCU	Two dense patches 30-50’ long, 10’ tall along edge facing river.	
ROMU	Scattered plants along edges.	
LYSA	2 light infestations found on river edge.	
AEPO	One thick patch found in the central part of the stand.	
EUEU	One large plant found.	
SITE CONDITIONS		
WATER ON PLOT	Connecticut River.	
ACCESS	Good access from field (stand 1D)	
TERRAIN	Relatively flat field edge, moderate slope down to river.	
POISON IVY	YES	

Description: This stand is a narrow, forested strip that runs along the edges of the Lower Field (stand 1D) and the Connecticut River. It is a dense, productive edge habitat with a high level of competition. NNIP are well established along the length of the stand, but most of plants are on the edge facing the field. LOMO and VINI are most established and are producing large amounts of seed.

Note: Due to the adjacent Connecticut River, only herbicides that are labelled for riparian use should be used in this stand.

Priority: HIGH

This stand includes light to heavy infestations of at least 10 NNIP species, has a lot of susceptible edge habitat, and is next to a large river, a natural avenue for NNIP to travel in.

The plants on the edge of the field have the potential to spread into that area and get established in full sunlight. It is a high priority to treat NNIP in this area.

Stand 4D:**EDGES****(Blow-Me-Down Farm)****8.31 acres**

INVASIVE PLANT SPECIES		
(listed from most abundant to least abundant)		
Spp. Code	Description / notes	Proposed Treatment
VINI	Very heavy infestation along the edge of Blow-Me-Down Farm (stand3J), and moderate to heavy along Route 12A.	Late May: Hand-pull ALPE along old road. Late June / early July; Foliar spray VINI and AEPO with 5% Garlon 3A and 0.5 gram/gallon Escort XP (water-based). Late summer / early fall: Foliar spray with Thinvert RTU 8% Rodeo and 1 gram/gallon Escort XP and cut stump with 50% Rodeo / 50% water.
LOMO	Moderate to heavy in north and south of stand, lighter in the central section.	
ACPL	Cut stump trees in the woods and on edges, seedlings and saplings consistently spread throughout.	
RHCA	One cut stump found, smaller plants are the worst in the north end of the stand.	
BETH	Scattered individuals and small patches throughout.	
ROMU	Some plants in the north and south of stand, lighter in the central section.	
EUAL	A light infestation found in the north end of the stand.	
AEPO	In south end near Route 12A and along old road into farm.	
ALPE	Basal rosettes and a few flowering plants in the southern end of the stand, along old road into farm.	
POCU	One small, dense patch to the south of the drive into the farm.	
SITE CONDITIONS		
WATER ON PLOT	None.	
ACCESS	Good access from Blow-Me-Down Farm or Route 12A.	
TERRAIN	Relatively flat field edge, moderate to steep slope down to road.	
POISON IVY	YES	

Description: This stand includes edge habitat from the main entrance to Blow-Me-Down Farm on Route south to stand 3I (Hardwood South). It includes field edges, road edges, a small field in the south end, and a section of farm road that travels between rows of Norway spruce (*Picea abies*) trees. The edges facing the main farm property (stand 3J) are very heavily infested with VINI, LOMO, and other NNIP.

The VINI is producing large amounts of seed. There were a few ACPL and a RHCA found that are big enough for cut stump treatment. In general, this area needs a lot of control work to restore it to a more native species composition. There are a lot of large, seed producing native trees on these edges, especially red oak, but a lot of the regeneration is NNIP.

Note: There are a lot of invasive plants on Route 12A, so anyone performing control work will be in the public eye and should also keep an eye on vehicle traffic.

There is a steep bank in the southeast corner of this stand next to the Chauncy cottage. There is a 90-100% groundcover of Vinca (*Vinca minor*) on the bank, which is growing about 50-75' into the woods from the field edge above. This is not a concern at the time, but Vinca tends to spread.

Priority: HIGH

This stand is growing at least 12 NNIP species, many of which are producing seed, and it has a lot of susceptible edge habitat. The area needs control work if a native species composition is going to have a chance to live here.

Stand 4E:

NORWAY MAPLE

1.5 acres

INVASIVE PLANT SPECIES		
(listed from most abundant to least abundant)		
Spp. Code	Description / notes	Proposed Treatment
ACPL	ACPL trees are well established and are composing most of the forest cover here. Most are in the pole size class, although there some larger individuals. There is a flush of ACPL seedlings on the ground, most under 12” tall, carpeting the forest floor.	September/October: Foliar spray with Thinvert RTU 8% Rodeo and 1 gram/gallon Escort XP (water-based). Cut stump / girdle trees and treat with 50% water / 50% Rodeo. Replant with native trees and shrubs in April/May the year following treatment (*not included in estimated hours).
LOMO	Some plants around edges of stand.	
VINI	Some along road and power cut.	
SITE CONDITIONS		
WATER ON PLOT	None.	
ACCESS	Good access from Blow-Me-Down Farm or Route 12A.	
TERRAIN	Flat bottomland, moderately damp soil.	
POISON IVY	YES, on road edge.	

Description: This is a small stand that has a 'Norway maple' forest cover type. The stand is almost exclusively ACPL poles in the main canopy, although there are some larger individuals. The forest floor is covered with very small ACPL seedlings. There is almost no native regeneration. Bringing this stand back to a native species composition should be done with some prior planning. It could be a special project to treat the seedlings and drop the larger trees during the fall, and it is strongly recommended that the area be replanted with native tree species the following spring. It is a small enough area that a project of that scale may be feasible with adequate planning.

Note: It is strongly recommended that this stand be treated differently than other heavy infestations due to the advanced state of the ACPL infestation.

Priority: HIGH

This is a stand that has a very small amount of native plant species left growing in it, although the diversity is slightly greater towards the road and power cut. ACPL is in an advanced state of infestation to the point where there is a second generation of seedlings coming up underneath a closed canopy cover. It is creating a monoculture and not allowing native plant species to grow in that area, and it is a high priority to treat this area.

Saint-Gaudens NNIP Stands 2017

