2018
Mount Agamenticus
Invasive Plants Report and Management Plan

Climbing Nightshade (*Solanum dulcamara*)
Photo by David Tibbetts

Invasives By Location

Summit

Sunset Overlook
Burning Bush – fire tower/com towers area
Reed Canary Grass – hrubland, near cell tower

Lawn
Cypress Spurge – around summit utility pole
Oriental Bittersweet - next to outhouses
Garden Bird's-Foot-Trefoil– very summit

Shrubland
Reed Canary Grass – Big A near cell tower
Glossy Buckthorn – summit/old ski trails
Multiflora Rose – around cell tower/ Staircase
Oriental Bittersweet – Big A near cell tower

Barn
Burdock - perimeter of barn field
Black Knapweed – perimeter of barn field
Reed Canary Grass – in shrub to the north
Climbing Nightshade – Fisher and Big A Trail
Garlic Mustard – south side of barn
Bull Thistle – north/south/west of Barn

Road
Leafy Spurge – next to cell tower
Morrow's Honeysuckle – next to cell tower
Glossy Buckthorn - next to cell tower

Base

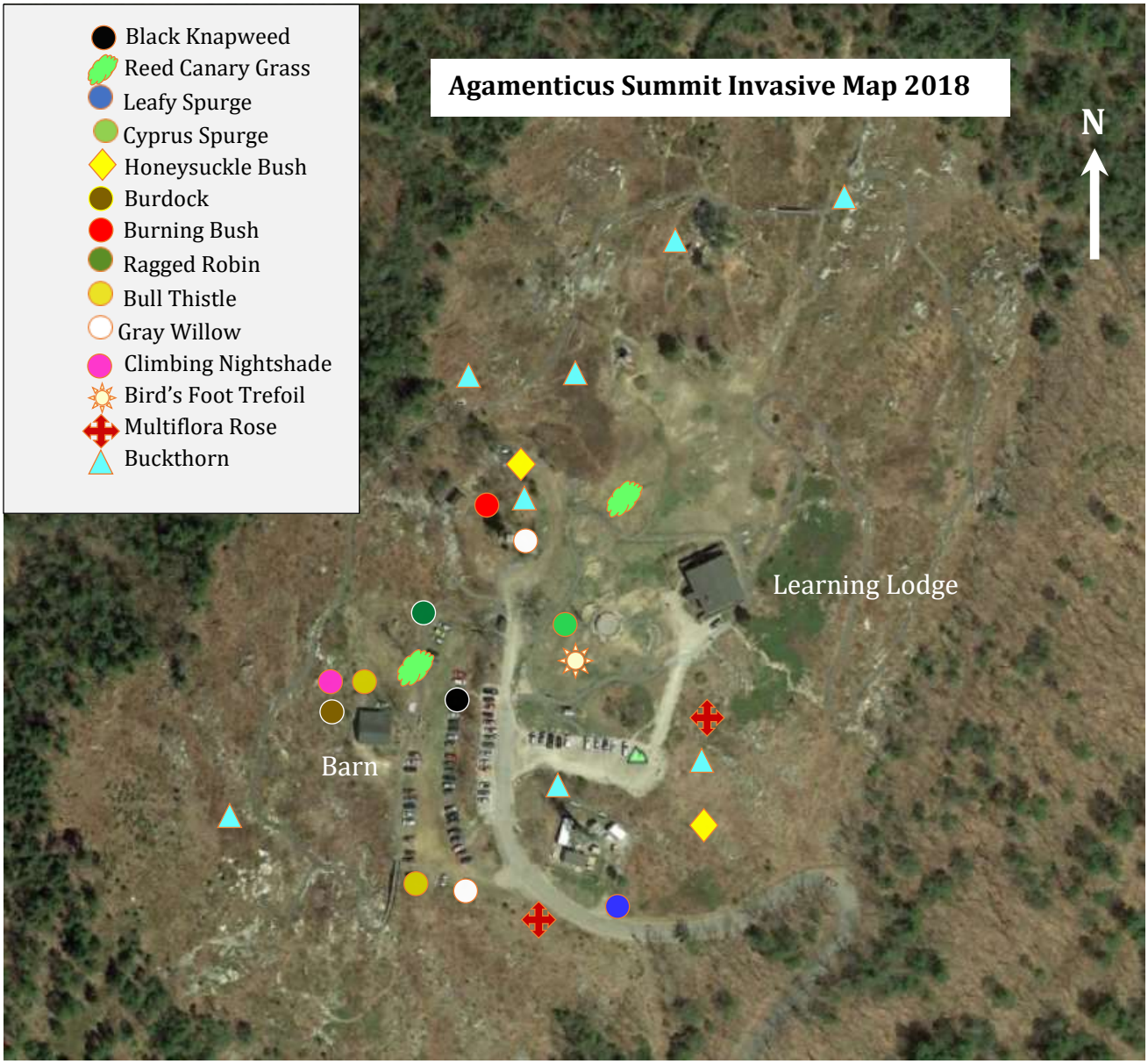
Access Point Adjacent to Wintergreen
Oriental Bittersweet

Cedar
Buckthorn – off trail, throughout (big one off trail across from 1st Beaver Tr. entrance
Oriental Bittersweet – areas adjacent to Cedar/Goosefoot intersection clearing
Barberry – off trail just before Goosefoot intersection

YWD Gate on Mountain Road
Buckthorn
Oriental Bittersweet

Corner of Old Mountain Road
Multiflora Rose (at the edge of mowed area)

Mountain Road
(see "Mountain Road Invasive Plants Map")
Japanese Knotweed
Purple Loosestrife
Gray Willow
Colts Foot
Barberry
Bittersweet
Honeysuckle Bush
Buckthorn


Agamenticus Summit Invasive Map 2018
N
Black Knapweed
Reed Canary Grass
Leafy Spurge
Cyprus Spurge
Honeysuckle Bush
Burdock
Burning Bush
Ragged Robin
Bull Thistle
Gray Willow
Climbing Nightshade
Bird's Foot Trefoil
Multiflora Rose
Buckthorn
Learning Lodge
Barn


Mountain Road Invasive Plants 2018
Cedar Trail
Summit Access Rd
Mountain Rd
Barberry
Colts Foot
Purple Loosestrife
Bittersweet
Gray Willow
Knotweed
Honeysuckle Bush
Buckthorn

Glossy Buckthorn
Frangula alnus

Plant Origin: Glossy buckthorn is originally native to Europe and Western Asia and was first introduced to the U.S. in the early 1800s as an ornamental plant. It is currently found in the Northeastern, Midwestern, and Western parts of the U.S.

Plant Information: Glossy buckthorn can be distinguished by its shiny alternating obovate leaves and pinnate venation. These deciduous shrubs or trees can grow up to 20 feet tall.

Flowers on glossy buckthorn are green-yellow in color and have five petals. (Flowers of common buckthorn have four petals.) The buckthorn plant will produce drupes when they reach seed-bearing age. Glossy buckthorn can be distinguished from the native alder-leaved buckthorn by the complete, smooth leaf edges in comparison with the serrate ends of alder-leaved buckthorn leaves. The roots of buckthorn are identifiable by their reddish color.

Threats to Native Habitats: Invasive buckthorn rapidly forms dense leaves, which shade out other native plants. These plants are able to propagate themselves quickly due to their ability to thrive in many habitats and soil types, as well as the fast speed of seed dispersal by birds and other mammals that eat the drupes produced by buckthorn. Habitat degradation and loss of native species diversity occurs as a result of the rapid spread of invasive buckthorn.

Location: Glossy Buckthorn remains prevalent throughout the **entire mountain**. The infestation is concentrated throughout the open shrub land extending along the summit down to the tree line. Buckthorn trees have also been found in the previously disturbed area at the **bottom of the ski mountain** before the intersection of Cedar and Goosefoot. Buckthorn is primarily found in shrubland areas but has also been found in disturbed woodland areas. One small buckthorn plant was found on **third hill** at the intersection of Third Hill Trail and Bobcat. In addition one buckthorn plant was located at the **YWD gate** on Mountain Road, and a couple small plants were found in the Cedar clearing area.

Cedar Trail Location (large tree):
N43°13.751
W070°41.962

Cedar Trail/Goosefoot intersection:
N43°13.760
W070°41.923

Cedar Trail Location (small tree):
N43°13.799
W070°41.837

Third Hill Location:
N43°13.85928
W070°40.44765

YWD Gate Location:
N43°12.949
W070°41.216

Native Veg Distribution: mixed and surrounding

Invasive Plant Distribution: scattered single and dense plants

Maturity of Plants: both vegetative and large mature plants with berries

Treatment: hand pulling/manual. Entire plant must be removed and bagged along with all roots and drupes.

Treatment Areas
2015: Throughout the 2015 season, the trail crew and volunteer groups have addressed the buckthorn in the shrubland areas at the summit. Trail crew members have eradicated buckthorn at the Cedar trail locations and at the third hill location. In total, 37 bags have been pulled.
2016: Throughout the 2016 season, trail crew and volunteer groups have addressed the buckthorn in the shrubland areas at the summit.
2017: Throughout the 2017 season, trail crew and volunteers have addressed the buckthorn in the summit area and along Sweet Fern trail. In addition, the staff pulled the buckthorn plant from the YWD gate location.
2018: Buckthorn was pulled throughout the summit shrubland area with the most found between the Kerr bench and the new ADA observation platform down to the tree line.

Disposal: Black bag, left to dry/die in barn loft, then sent to landfill

Tools used: loppers, clippers, Pulaski, pickmatic, weed wrench (for large bushes)

Future Treatment: Buckthorn continues to prevail throughout the summit. It will be necessary to closely monitor and pull buckthorn around the summit and all other known areas in successive seasons. It is best to start pulling early since seeds ripen from July-September.

Oriental Bittersweet
Celastrus orbiculatus

Plant Origin: Oriental bittersweet originated from East Asia and was introduced to the U.S. in the 1860s as an ornamental plant and to help with erosion control. It is currently found in the Northeastern and Midwestern parts of the U.S.

Plant Information: Oriental bittersweet, also known as Asiatic bittersweet, is a woody vine that wraps itself around trees and other supporting objects. The bittersweet vine can climb up to 60 feet. Young stems are green while larger, mature stems are a light brown color. Bittersweet's oblong leaves are alternating with serrated edges. Leaves are shiny green in the summer months, turning yellow in the fall. The flowers, usually appearing in May or June, are green-yellow with five petals.

Threats to Native Habitats: Oriental bittersweet aggressively climbs up native trees and shrubs, smothering, constricting, and even uprooting them. The dense leaves can also shade out other species. Due to its ability to hybridize with American bittersweet, oriental bittersweet can threaten native genetic biodiversity.

Location: Oriental bittersweet has been found in several disturbed areas along **Mountain Road, Cedar Trail**, as well as the **summit.** On the summit bittersweet was found both inside and next to the fence area by the outhouse, as well as to the right of the lodge in the garden beds. A large amount of bittersweet was located behind the water district gate on Mountain Road lining both sides of the trail and in the clearing to the right of the Cedar/Goosefoot intersection (disturbed site by the old ski lift). It has also been found along the rocks lining the parking on Mountain Road (access point adjacent to Wintergreen trail). Bittersweet sites include forest clearings and trailside locations with previous human disturbances.

Fence/Outhouse Location	YWD Gate Location
N43°13.403	N43°12.936
W070°41.568	W070°41.233

Cedar/Goosefoot Clearing Location
N43°13.732
W070°41.894

Native Veg Distribution: mixed

Invasive Plant Distribution: scattered plants

Maturity of Plants: vegetative

Treatment: Cutting vines with clippers and manually pulling and disposing of roots. Vines hanging from trees can be left if they are not yet flowering.

Treatment Areas
2015: Oriental bittersweet has been addressed at the summit fence location, the trail access point on Mountain Road (adjacent to wintergreen trail) and the ski lift clearing site.
2017: During the 2017 season oriental bittersweet was addressed at the summit, YWD gate, and the ski lift clearing site locations.
2018: A few small plants were found on Mount Rd (dirt section) that appears to have been introduced with road fill material. A few plants were pulled throughout the summit area.

Disposal: Black bag, left on barn loft to die/dry out, then to landfill

Tools Used: clippers, Pulaski, pickmatic, and hand pulling

Future Treatment: All known bittersweet locations should continue to be monitored in the future field seasons, especially in the old ski lift site, which was severely disturbed. In order to better contain and stop the bittersweet spread in the ski lift area, trail crew members should continue to pick up trash in the clearing location in future seasons. Buried bottles, cans, broken glass, and other debris have created a disrupted area for invasive plants to thrive while reducing the ability of native plants to grow there.




Black Knapweed
Centaurea nigra

Plant Origin: Black knapweed is native to Europe and was accidently introduced to the U.S. in the late 1800s through contaminated seed or ballast. It has been reported in all the New England States and is wide spread across the Northeast and Northwest US.

Plant Information: Black knapweed is characterized alternate lance shaped leaves with purple or pink flowers on short stalks. Brown leaf-like hairy bracts can be found near the base of the flower. One large root goes straight down and smaller roots grow outward from the base of the stem, making extraction difficult without the stem breaking off at the soil.

Threats to Native Habitats: Black knapweed releases a toxin into the surrounding soil that prevents other plant species from growing. This excludes native plants from growing in surrounding area, which increases soil degradation and run-off because the water holding capacity of the soil is greatly reduced.

Location: Black knapweed is concentrated at the summit along the edge of the barn field and the hill opposite the barn. (As far as Blueberry Bluff)

Barn Location
N43°13.391
W070°41.574

Native Veg Distribution: surrounding

Invasive Plant Distribution: scattered plants and clumps

Maturity of Plants: flowering and vegetative

Treatment
2015: All of the known knapweed was hand pulled by volunteers and trail crew members on June 27th, 2015.
2016: Knapweed all pulled by staff
2017: All knapweed was pulled in the surrounding barn area by staff
2018: Pulling was done around the barn field with not many plants being found.

Disposal: Black bag

Tools Used: Handpick, Dandelion puller, trowel (large plants)
Future Treatment: In future field season, the crew should carefully scan the barn/field area and pull any knapweed, several times throughout the season.

Japanese Knotweed
Fallopia japonica

Plant Origin: Japanese knotweed is native to Eastern Asia and was first introduced to the U.S. in the late 1800s originally as an ornamental plant, and later used for erosion control. It is now located in the majority of U.S. states and considered invasive in 39 of them.

Plant Information: Japanese knotweed is an herbaceous shrublike perennial with smooth upright stems and swollen joints surrounded by a membranous sheath. The alternating, pinnate simple leaves are usually 4-6 inches long with complete edges and a wide oval shape with a pointed tip. In the summer the plant produces small white-green flowers and winged fruits. The stalks of knotweed look similar to those of bamboo.

Threats to Native Habitats: Knotweed rapidly spreads from one area to another, shading out other plants with its broad leaves. Knotweed can grow up to 10 feet and is able to thrive in many diverse environments. Once established, it is very difficult to eradicate because of its ability to quickly resprout from its roots. If knotweed is left unchecked, it has been known to rapidly and aggressively alter native ecosystems.

Location: There is one known remaining knotweed site located down the **first multiple use access point** off of the dirt part of Mountain Road before the Wintergreen trail. A second spot is just east of the Cedar Parking on the north side of Mt Rd.

Mountain Road Location
N43°13.239
W070°41.985

Native Veg Distribution: surrounding

Invasive Plant Distribution: monoculture

Maturity of Plants: vegetative

Treatment: hand pulling/manual

Treatment Area: The known knotweed site was addressed and all plants were pulled twice during this field season. It is important to pull and bag all roots, runners, and plant fragments as the knotweed will re-sprout from any roots carrying the plant's genetic material. In 2018, plants were hand pulled every 1-2 week.

Disposal: Black bag, then left to dry in barn loft

Tools Used: hand pick, Pulaski, clippers, trowel

Future Treatment: Due to disturbances by human activity, pulling the knotweed will be necessary in future seasons. The known sites should be monitored for other invasive plant species as well.

Reed Canary Grass
Phalaris arundinacea

Plant Origin: Reed canary grass is native to both Europe, Asia, and North America. The Eurasian of this plant however is far more aggressive than the one native to the U.S. and is now much more prevalent. It was originally introduced to the U.S. in the 1800s to help with erosion control, and is currently present in 43 states.

Plant Information: Reed canary grass is a perennial that typically grows in wet soil. Leaves are arranged in a basal rosette around the course stem, which can grow 6-8 feet tall. The seed clusters turn from green to a purple-ish color in full bloom before becoming straw colored when the seed finally form.

Threats to Native Habitats: The extensive root system of reed canary grass allows it to quickly establish itself in wetland areas, where it densely grows, forcing out other vegetation. Seeds spread rapidly from a panicle at the top of the plant. This invasive can also withstand drought which allows it to outcompete native plants.

Location: Reed canary grass is located throughout the summit. It is concentrated in clusters around the picnic table at **sunset overlook**, along the Big A trail, on the back side of the **barn**, and at the entrance to **Fisher trail** with patches extending along the area to the right of the trail.

Sunset Overlook Location
N43°13.414
W070°41.577

Native Veg Distribution: mixed

Invasive Plant Distribution: scattered single plants and clumps of plants

Maturity of Plants: seeds

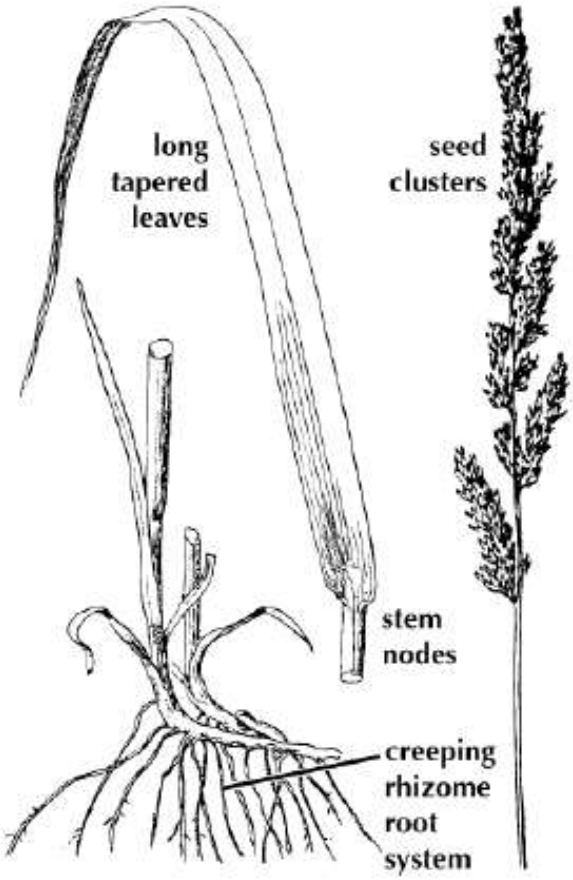
Treatment: snipping off seeds, hand pulling/manual

Treatment Areas: The sunset overlook and Big A reed canary grass locations were addressed in the 2017 season. The seeding tops were cut and bagged, stalks and roots were not pulled. In 2018 no control work was done.

Disposal: Black bag, the left to dry in barn

Tools Used: Scissors

Future Treatment: The trail crew should carefully monitor the area and cut the tops of the grass as soon as it begins to produce seeds and before seeds begin to mature which occurs in early July.


long
tapered
leaves
seed
clusters
stem
nodes
creeping
rhizome
root
system

Multiflora Rose
Rosa multiflora

Plant Origin: Multiflora rose is originally from eastern Asia and was first introduced to the U.S. in the 1800s for ornamental purposes. Starting in the 1930s it was used to help prevent soil erosion and act as a natural barrier on highways and in pastures. It can now be found mainly in the eastern part of the U.S.

Plant Information: Multiflora rose is a perennial shrub with thorny arching stems and opposite serrate leaves. Small fragrant white flowers appear on the shrub in May, which later form red rose hips. Multiflora rose can be distinguished from other rose species by its fringed bracts ("hair" on stem) located at the node of the leaf stems.

Threats to Native Habitats: Multiflora rose shrubs grow in dense thickets that prevent native species from growing. This invasive plant can thrive in woodlands, prairies, fields, roadsides, savannahs, and disturbed sites. On average, one multiflora rose shrub produces a million seeds a year, which can remain dormant in the soil for up to twenty years.

Location: There is one known multiflora rose location along the left corner of **Old Mountain Road**. In 2018, a number of small plants were found along the summit.

Old Mtn. Road Location
N43°12.925
W070°40.211

Native Veg Distribution: surrounding

Invasive Plant Distribution: single dense plant

Maturity of Plants: flowers

Treatment: 2018 pulled several plants with weed wrench around summit

Suggested Treatment: If any are found they should be pulled as soon as possible, making sure to remove all roots.

Common Reed
Phragmites australis

Plant Origin: Common reed originates from Europe and was accidentally introduced to the U.S. in either the late 1700s or early 1800s through ballast material. There is also a native strain of common reed, but the European one is much more aggressive.

Plant Information: Common reed is a tall wetland grass with long leaves and parallel venation. This perennial can grow up to 18 feet tall. Phragmites spread from stolons that grow horizontally from existing stems, or from rhizomes extending from their underground root system. These rhizomes create a thick mat from which new roots cam sprout. Once mature the seeds tops have a reddish purple color.

Threats to Native Habitats: Phragmites spread rapidly and form dense, tall thickets that are difficult for animals to navigate through. Due to their ability to take hold in disrupted wetland habitats, they eradicate wetlands that are necessary habitats for native fish and other wildlife species. Decomposing phragmites raise the surface level of salt marshes, creating higher and drier areas that are unable to handle salt water flooding. This phenomenon affects the salinity of the water and thus alters the natural ecosystem, excluding native salt marsh species. A high concentration of dried plant material also creates a fire hazard.

Location: Common reed has been found on the left side of **Mt. View Road**. The plants spread over the entire clearing, from the street sign to the edge of the surrounding woods.

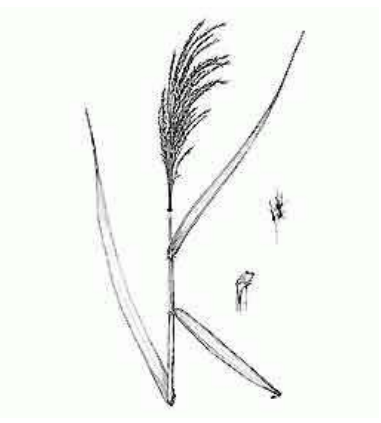
Native Veg Distribution: absent

Invasive Plant Distribution: scattered plants/monoculture

Maturity of Plants: vegetative

Treatment: none, although it appears in 2018 the landowner is cutting it.

Suggested Treatment: Either pull entire plant or cut of the seed tops in early spring before flowering begins.



Leafy Spurge
Euphorbia esula

Plant Origin: Leafy spurge is native to central and southern Europe as well as parts of Asia. It was accidentally introduced to the U.S. in the early 1800s as a seed contaminant. It is now present in the majority of the U.S. except for in the South.

Plant Information: Leafy spurge is a perennial with oval-lance shaped leaves and small yellow flowers in clusters of threes. This invasive can be identified by a white sap released by the plant upon breaking the stem.

Threats to Native Habitats: Leafy spurge is a threat to native plant species because it releases toxins that prevent plants from growing underneath it. It also shades out other species, aggressively taking over land.

Location: Leafy spurge has been found along the **right of the access road** leading to the summit, diagonal to the gated entrance to the generator.

Access Road Location:
N43°13.342
W070°41.525

Native Veg Distribution: mixed

Invasive Plant Distribution: scattered plants

Maturity of Plants: vegetative and flowers

Treatment: hand pulling/manual

Treatment Area: All of the leafy spurge was addressed and pulled from the one known location by staff in the 2017 field season. Hand pulling was done twice in 2018.

Disposal: Black bag, left to dry in the barn

Tools Used: trowel

Future Treatment: Continue to monitor known sites and pull any if found. Flowering begins mid-June so try and pull any plants before then to prevent seeds from spreading.

Cypress Spurge
Euphorbia cyparissias

Plant Origin: Cypress spurge is native to Eurasia and was first introduced to the U.S. in the 1860s as an ornamental plant. It is now currently found in 42 states in the U.S.

Plant Information: Cypress spurge has many linear leaves arranged in whorls around the woody stem. The taproot may reach lengths of 10 feet. Flowers are small and yellow, turning to red in the late summer months. Leafy spurge can be identified by the white sap that is released upon breaking the stem.

Threats to Native Habitats: The thick growth of cypress spurge allows it to outcompete native vegetation. Cypress spurge contains toxic latex that can irritate the skin, eyes, mouth, and intestinal tracts in humans. It is also potentially toxic to cattle and horses. Grazers tend to avoid it.

Location: Cypress spurge has been located on the summit near the **utility pole** as well as scattered on the hill by the garden beds and picnic tables.

Summit Lawn Location:
N43°13.406
W070°41.534

Native Veg Distribution: surrounding

Invasive Plant Distribution: several small, isolated, scattered plants

Maturity of Plants: vegetative

Treatment: Pulled entire plant and roots out. Still pulling a few plants 2-3 time in 2018.

Tools Used: small weeder

Future Treatment: continue to monitor and pull plants, try not to mow over known areas as this often spreads seeds and increases the density of the plants

Morrow's Honeysuckle
Lonicera morrowii

Plant Origin: Morrow's honeysuckle is originally from Japan and South Korea, and was first introduced to the U.S. in the 1800s as an ornamental plant as well as to help control soil erosion. Today it is most prevalent in the mid-Atlantic region, but has spread as far as Maine and Wisconsin.

Plant Information: Morrow's honeysuckle has elliptical leaves along a light brown stem, which is discernable by its hollow pith. In the spring, the shrub sprouts small white flowers followed by bright red berries. This invasive shrub can grow up to seven feet tall.

Threats to Native Habitats: The berries produced by morrow's honeysuckle allow the plant to rapidly propagate itself across open woodlands, fields, and roadsides. The dense vegetation formed by this invasive honeysuckle shades out native plants, altering the ecosystem. In addition the berries produced provide much less nutritional value for the animals that eat them than the berries of native plants.

Location: Morrow's honeysuckle has been identified in several locations at the summit. In the past two plants were located along **Big A by the cell tower**, and one plant was located **southeast of the lodge** in the shrubland in the 2017 season. There have also been bushes found in the **Cedar/Goosefoot clearing** by the man-made pond in past seasons.

Summit Lodge Location:
N43°13.396
W070°41.505

Native Veg Distribution: dominant, surrounding

Invasive Plant Distribution: single bush

Maturity of Plants: vegetative, berries

Treatment: hand pulling/weed wrench

Treatment Area
2015: The trail crew pulled 2 honeysuckle bushes near the cell tower and one bush from the south side of the fence surrounding the water tower.
2017: One bush southeast of the lodge was pulled by staff.
2018: Several **s**ingle new plants were found scattered in the summit shrubland area and pulled

Disposal: Black bag, left in the barn to dry

Tools Used: clippers, Pulaski

Future Treatment: The best approach for future seasons will be to monitor the known areas early in the season (April-May) before the honeysuckle reaches seed-bearing stage, preventing the spread of the berries by birds. The sensitive area around the water tower and cell tower should also be carefully searched throughout the season. PULL IN SPRING/EARLY SUMMER before bushes begin producing red berries.

Japanese Barberry
Berberis thunbergii

Plant Origin: Japanese barberry is originally from Japan, and was first introduced to the U.S in 1875 as an ornamental plant. It is currently found in eastern and Midwestern U.S.

Plant Information: Japanese barberry is a deciduous shrub containing small, alternating, obovate leaves. Sharp spines protrude at nodes along the stem which is reddish in color when young and turns grayer as the plant matures. Flowers are small and pale yellow, arranged in a hanging raceme formation. Bright red berries are produced in the fall.

Threats to Native Habitats: Invasive barberry produces seed that are spread and germinate rapidly, allowing it to take over large areas of land. The dense growth of barberry prevents the growth of native species.

Location: Barberry is in the **Cedar/Goosefoot clearing** near the man-made pond.

Cedar/Goosefoot Clearing Location: N43°13.734, W07041.908

Native Veg Distribution: surrounding, dominant

Invasive Plant Distribution: single bushes

Maturity of Plants: vegetative

Treatment: manual pulling of roots and disposal of entire plant

Treatment Area: Two barberry bushes found in the Cedar/Goosefoot clearing were pulled by staff in the 2017 field season. In 2018 a couple of new plants were found along Mount Road and the summit shrubland.

Disposal: Black bag, then left to dry in barn

Tools Used: Pulaski, clippers

Future Treatment: Continue to monitor known sites for any new growth, especially if the plants were pulled during or after flowering.

Lesser Burdock
Arctium minus

Plant Origin: Lesser burdock is originally from Europe, and is thought to have been introduced to the U.S. by early French and English colonists. It is now found in the majority of the U.S. except for in some areas along the southern border.

Plant Information: Lesser burdock, also known as common burdock, is a biennial in the aster family, typically identified by its prickly burs that sprout pink, purple, or white spiny flower heads in the second year of growth between July and October. In the first year of growth, burdock forms a basal rosette with large heart shaped leaves.

Threats to Native Habitat: Lesser burdock hosts root rot and powdery mildew.

Location: Burdock is located to the right and behind the barn, as well as along **Fisher trail**.

Fisher Trail Location
N43°13.396
W070°41.600

Native Veg Distribution: surrounding

Invasive Plant Distribution: Large scattered plants (4-5ft tall)

Maturity of Plants: flowering

Treatment: hand pulling/manual. Cut taproot with shovel as far below ground as possible

Treatment Area: Trail crew and volunteers pulled 8 bags of burdock from the barn and Fisher trail area in the 2017 field season. In 2018, Barn, Fisher Trail, and along Big A.

Future Treatment: Several burdock plants still remain in the Fisher trail barn area so continue to closely monitor that area and pull any left over. In future season try and pull before the plant begins flowering and producing seeds (late summer/mid-August).

Burning Bush
Euonymus alatus

Plant Origin: Originally from Asia, burning bush was first introduced to the U.S. around 1860 as an ornamental plant. It can now be found in the area stretching from New England to northern Florida, the Gulf Coast, and Illinois.

Plant Information: Burning bush is a deciduous shrub with opposite elliptical leaves and distinctive ridges forming bars along the stems (winged stems). Leaves turn bright red in the fall and red/purple fruits disperse seeds,

Threats to Native Habitats: The dense growth of burning bush threatens natural ecosystems and outcompetes native plant species. This shrub forms a "seed shadow" beneath the parent plant, allowing it to spread rapidly.

Location: There is one burning bush located off of **Big A near the cell tower**, and close to where Morrow's honeysuckle was found in the past.

Native Veg Distribution: surrounding

Invasive Plant Distribution: single bushes

Maturity of Plants: vegetative

Treatment: hand pulling/manual

Treatment Area: The one known bush was pulled and bagged by staff during this field season. In 2018 a few plants were found just NW of the fire tower

Disposal: Black bag, then left to dry in the barn

Tools Used: Pulaski, clippers

Future Treatment: Continue to monitor any new growth in known areas and pull before the plants disperse seeds (early summer).



Ragged Robin
Lychnis flos-cuculi

Plant Origin: Ragged robin is native to Europe and is thought to have been introduced either accidentally in the 1880s through ship ballast or as an ornamental plant. It is mainly found in the northeastern part of the U.S.

Plant Information: Ragged robin has thus far only been listed as invasive in Connecticut, but is on the rise in the northeast. This invasive wildflower spread quickly and pushes out native species.

Location: Several ragged robin plants have been found near the intersection of Fisher trail and Big A with plants scattered going up the old trail.

Fisher Trail/Big A Location
N43°13.387
W070°41.629

Native Veg Distribution: surrounding

Invasive Plant Distribution: scattered

Maturity of Plants: flowers

Treatment: hand pulling.

Treatment Area: The one known ragged robin site was addressed by staff during 2017 field season. In 2018 only one or two plants pulled around the edge of the Barn Field.

Disposal: Black bag

Tools Used: trowel

Future Treatment: Continue to scan the known area for ragged robin in the future, but not a high priority.

Bull Thistle
Cirsium vulgare

Plant Origin: Bull thistle is native to most parts of Europe, Western Asia, and northwestern Africa. It is believed to have been introduced to U.S. during colonial times, and is now found in all 50 states.

Plant Information: Bull thistle is a biennial in the Aster family. It has prickly white hairs and thorns on both the top and bottom of its leaves as well as along the stem. It produces a purple spiny flower head.

Threats to Native Habitats: Bull thistle is highly competitive and will very quickly invade an area, forcing out native species and reducing diversity. It also contributes to soil erosion.

Location: Bull thistle has been located at several sites around the summit. It has been found in the area to the right of the barn along **Fisher trail**, and farther down on Big A. In addition, several were found at the intersection of the **overlook and Big A** as well as the intersection of **Sweet Fern and Big A** and south of the **Big A/Blurberry** bridge.

Native Veg Distribution: surrounding

Invasive Plant Distribution: scattered single plants and large clusters

Maturity of Plant: flowering

Treatment: 2017 none. 2018, plants dug up before flowering and left out to dry.

Suggested Treatment: Monitor known sites, if plants begin flowering seed heads should be clipped and disposed of and/or remove entire plant.

Suggested Disposal: If flowers/seeds are not present pulled plants can be left on site, if flowers/seeds are present pulled plants must be removed and bagged


Canada Thistle
Cirsium arvense

In previous seasons Canada thistle has been found around the barn and to the left of the barn. Looks very similar to bull thistle. In 2018, one plant was found and pulled near the barn on the Big A Trail.

Garlic Mustard
Alliaria petiolate

In previous years garlic mustard has been found around the native plant gardens.

Location: In 2018, a dozen or so plants were found in the shrub stirp on the south side of the barn.

Management: In 2018 they were pulled and bagged but some had gone to seed. There is a 12-year seed bank so monitoring this site will be required until at least 2030. The best time to pull is in late April or early May when the plants are in flower.

Gray Willow
Salix cinerea

Plant Origin: Native to Europe and western Asia

Plant Information: It can be classified as a shrub or small tree. and has become particularly invasive to our south. ID - stems with raised ridges under the bark and leaf blades 1.8–4.3 times as long as wide

Location: Overflow Parking gate, SE corner of Fire Tower fence, Cedar Trail gate.

Native Veg Distribution: Invades by the layering of branches and toppling of over-mature, live stems. Displacement of native vegetation occurs with a loss of biodiversity.

Invasive Plant Distribution: wind dispersed, will grow in a wide range of soils

Maturity of Plants: vegetative or flowering

Treatment: manual pulling of roots and disposal of entire plant. Stems on the ground will regenerate into new plants. If cutting large plants, remove any new shoots throughout growing season.

Treatment Area: Overflow Parking gate, SE fence corner of Fire Tower, Cedar Trail Gate

Disposal: Remove all plant parts, bag and dry in Barn. Cut larger shrubs and bag all parts, then continue to cut regrowth several times throughout the growing season.

Tools Used: Weed wrench, shovel, Pulaski, clippers

Future Treatment: Continue to monitor known sites for any new growth

Climbing Nightshade
Solanum dulcamara

Plant Origin: Native to Eurasia

Plant Information: Perennial vine or scrambling semi- woody shrub. Toxic to mammals if ingested. Leaves and stems have a strong ash tray like odor.

Location: From the barn along Fisher Trial to the Big A Trail

Native Veg Disturbance: Can become the dominant weed crowding out native shrub species such as dogwood, elderberry, witch hazel, and viburnums.

Invasive Plant Distribution: Individual plants and small clumps climbing over shrubs

Maturity of Plants: Flowering and fruiting

Treatment: 2018 Hand-pulled the stems close to the ground and pulled and dug out the roots,

Treatment Area: Recheck work area often because even small root or stem fragments left behind can re-sprout.

Disposal: Bag and dry before disposing in dumpster.

Tools Used: Shovel, trowel

Future Treatment: Continue checking and hand pulling

Bird's-Foot-Trefoil
Lotus corniculatus

Plant Information: Garden bird's-foot trefoil is a non-native plant in the pea family. It is currently growing in the lawn area surrounding the summit observation platform. It is a nitrogen fixing legume that is helping to build our thin soils and prevent wind erosion. Over time, this plant may naturally be replaced with grasses.

Management: Keep watching this area to see if the plat coverage changes (more grass or trefoil coming in). This plant does not do well with frequent mowing and dry conditions. If it dies back, grass or clover seeding would be needed to keep a cover over the soil.

Vectors for Invasive Plants

Early detection and treatment of new invasive plant populations are the most effective ways to prevent their spread and achieve eradication. If we look at some of the more common ways a species can be introduced, we can focus on the most likely places where they can first appear. Invasive plants can outcompete native plants for resources and can spread through vegetative or sexual reproduction. Many of these plants will take advantage of disturbed sites where bare soils and sunlight create ideal growing conditions. Such sites should be given priority for routine monitoring for invasive plant surveys. Here are a few of the pathways to be aware of when considering potential introduction of unwanted invasive plant species.

Wildlife

Some invasive vectors are unavoidable, such as birds and other wildlife. But there are areas that are more vulnerable to this type of invasion. Trees where birds perch or roost are top sites to monitor. Game trails and wildlife corridors are also vulnerable sites for wildlife transported seeds to disperse. Monitoring of such sites should be done several times throughout the growing season.

Fill Material

Gravel, top soil, mulch, wood chips and compost are all potential carriers of invasive plat seeds and material that can grow. Road shoulders are highly vulnerable area for introduction and spread of invasive plants. Anywhere fill is used, sites should be surveyed for many years following job completion. Some invasive seeds can remain viable in the soil for many years, such as multiflora rose whose seed can germinate up to 20 years after they were produced.

Landscaping and Lawn Care

Equipment that is used for landscaping and lawn mowing can carry invasive seeds and plant fragments. Potted and balled plants are other potentials for carrying unwanted weed species. Nearly all seed mixes that are used to quickly stabilize bare ground at work sites carry weed seeds, and some of these seeds can be invasive species. One such hitch hiker is garlic mustard, having very small seeds that can remain viable for up to 12 years in the soil. This biennial mustard species looks very much like a violet its first year of growth and can easily go undetected until it releases seeds the following year. It is then a long hard battle to keep ahead of it with hand pulling and even herbicide use.

Monitoring these most vulnerable sites for invasive plants is essential for early detection and management. Once a population of invasive plants becomes established, it is expensive and requires a large amount resources to control. Up front comitment to implement monitoring surveys by qualified plant specialists and rapid management responses is the best way to maintain healthy biodiverse habitats, ecosystems, and our natural resources.

"IMAP INVASIVES"

The Maine Natural Areas Program has set up an online reporting and mapping application for documenting invasive species within the State of Maine. An account has been set up for Mount Agamenticus to enable entering invasive plant species data into their system. Here is a basic introduction on how to access and use this system.

https://login.imapinvasives.org/meimi/login

Username: chrboutin
Password: buckthorn16
Or
Username: isamoroney
Password: MountA2017

Data entry: For new invasive plant populations and/or species found in and around Mount Agamenticus.

Observation: Can be entered on smartphone or laptop. Addresses who, what, when, where, and photos of invasive. Once the point is confirmed, it cannot be edited.

Assessment: More detailed info of invasive (area infested, percent covered, etc.)

Survey: Search for presence/absence of invasives (negative data)

Treatment: Control effort details

Infestation management record: Links together all records of a species in an area (under treatment, presumed extirpated, etc.)

The observation information is not just a point entered. Once it is confirmed, you will be able to enter polygon records not just a single point for infested areas.

To find Mount A data, click **show my stats** or search for either username in observation table.