Appendix D

Invasive Plants and Control Methods
Mount Agamenticus
2006

By David Tibbetts
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Species List:

1. Garlic mustard (Alliara petiolata)
2. Common barberry (Berberis vulgaris)
3. Oriental bittersweet (Celastrus orbiculatus)
4. Spotted knapweed (Centaurea maculosa)
5. Cypress spurge (Euphorbia cyparissias)
6. Leafy spurge (Euphorbia esula)
7. Japanese knotweed (Fallopia japonica)
8. Glossy buckthorn (Frangula alnus)
9. Morrow's honeysuckle (Lonicera morrowii)
10. Reed canary grass (Phalaris arundinacea)
11. Common reed (Phragmites australis)
12. Multiflora rose (Rosa Multiflora)

Introduction

During the 2006 field season, seven invasive plant species were identified around the summit clearing and at the edge of the woods around the summit. Four additional species were found at the base within one mile of the summit along the roadsides and one in a residential garden/ lawn. All species except for glossy buckthorn are early detections and are confined at this time to very small patches. Manual controls have been started, or are planned to begin this year, on all sites. The management plans listed below need to be implemented and adhered to religiously for the prescribed duration periods. In addition, frequent surveys and species specific searches should be conducted periodically around all sites and along the roadsides throughout the growing seasons.

Because of the critical habitats and rare species in this area, careful attention should be given to any potential disturbance that could give invasive species new spaces to expand into. Road work, earthwork, construction fill, utility work, and timber harvest all have the potential for creating favorable conditions to allow expansion for any of the listed species. Many of the endangered species in this area are dependent of wetlands. These wetlands are especially vulnerable to disturbance as many of the aggressive invasive plant species that occur in or around wet soils will out compete native plants for these spaces and rapidly degrade habitats and lower biodiversity once established.

Manual controls have been used for several years to control glossy buckthorn around the summit. This has helped to keep many of these shrubs from developing and fruiting but the population is still interspersed with the native plant community over several acres. The conservation crew members along with volunteers have spent many days each season, and are committed to continuing their efforts, to reduce and eliminate this species.

Species Information

Garlic mustard

Location: 87 Old Mountain Rd. UTM (NAD 83) 0363655 4786756

Population Size: ½ acre in gardens (private residence)

Management Plan: Plant forms basil rosette leaves the first year that stay green through the first winter. Flowers and seeds will develop the second year before the plant dies. Hand pulling was done by the landowner/resident (Annie Rueb) this year in early June. Hand pulling should be done each spring, when the plants come into blossom, for the next five to six years. Plant spreads only by seeds and the seed viability is two to five years.

Common Barberry

Location: 20 ft from SE corner of parking area, and inside the edge of the wood on the south end of the lower (western most) parking area.
0362592 4786939
0362541 4786903

Population Size: Two shrubs found at six feet high.

Management Plan: Pulling these two plants and their roost using a weed wrench. Check over next two years to see if any new plants develop and continue to pull stems and roots.

Oriental bittersweet

Location: Folly Pond gate on Mountain Road. Vines are growing on the trees 50 feet inside the gate. 362988 4786147

Population Size: 200 sq. ft. Plants are located at the south edge of the cleared area (50 feet inside the gate)

Management Plan: Small plants and their roots can be pulled. Larger vines can be cut near the ground 3-4 times a year. This will keep the plants form fruiting and control spreading. Chemical application should not be used at this site due to the close proximity to drinking water supply.

Spotted knapweed

Location: Field between the summit barn and the well. 0362590 4786953

Population Size: 2 acres

Management Plan: This is a biennial herb in the aster family that grows in tufted clumps. Hand pulling was done by the Conservation Crew in Mid July this year. Flowers quickly go to seed and watching for the first blooms is an indication of when to start pulling. To help hand control methods reduce the population over the next two years, use of a shovel to cut the plants just below the ground level. This will help to insure all above ground parts of the plant have been removed to prevent flowering. Since the grass it tall in this area, some plants may be overlooked and the population may persist. If manual methods fail to eradicate the knapweed, it may become necessary

to mow this site several times throughout the growing season for three to four consecutive years to eliminate this species.

Cypress spurge

Location: In lawn at summit, 15 feet north west of utility pole NET&T/11. 0362559 4787028

Population Size: 100 sq. ft.

Management Plan: Because of its persistent nature and ability to regenerate from small pieces of root, it is extremely difficult to eradicate. A combination of mowing and hand pulling was used this year and the reoccurrence has been diminishing throughout the season. In the spring, when the flowers first appear, the plants should be pulled. Between mowing, any plants that appear should be pulled. Since this was a small population, an early detection, with rapid response, manual control has a good chance of elimination. It is important to be persistent with the management plan throughout the growing season to prevent spread and feasibly eradicate. This species is a serious threat to the natural community as it will displace native species by using plant toxins that will prevent the growth of all other plants.

Leafy spurge

Location: On the north edge of the summit road to the downhill side of the first driveway leading to the communications tower 0362573 4786894

Population Size: 100-200 sq. ft.

Management Plan: This site only gets mowed ones or twice by the town each year and more manual pulling was done at this site than at the cypress spurge site. The same plan for the management of the cypress spurge should be implemented for this species as they both share the same growth and invasive caricaturists. A late growing season pulling is important for both species (early to mid September) as energy from the vegetative parts of the plants moves into the roots at this time.

Japanese Knotweed

Location: On Mountain Road in ditch north side 300 ft. west of the Summit Rd. and Mountain Road shoulder on north side 100 ft. east of Cedar Trail Parking area. 0362454 4786264
0361859 4787458

Population size: By Summit Rd. 100 sq. ft.
By Cedar Parking area 100 sq. ft.

Management Plan: This plant spreads almost entirely by rhizomes that can reach 45-60 ft. in length. New plants can start from root fragments or leaf and stem fragments as well. All pulled plants should be bagged and removed from the site and stored until all parts are dead. Hand pulling every week or two throughout the growing season will help reduce the vigor and could, over the next two to three years, eliminate this species from these two sites. Both sites are fairly new introductions and are limited in the area they are occupying at this time. Because of the persistence of the root system, if persistent manual controls has not eradicated these plants from both sites

by 2009, glyphosate (Roundup) should be applied to the regrowth after the first hand pulling in the spring.

Glossy buckthorn

Location: At the upper section of Sweet Fern and Vultures View trails. There are also some scattered around the summit at the woods edge and a few at the ski lift base area. (Sweet Fern population center):

0362653 4787219

Population Size: 4 to 6 acres

Management Plan: Buckthorn spreads primarily by seed and birds are responsible for the majority of the seed dispersal. Cutting and pulling have been done on the mountain for at least five years. Pulling has been more effective than cutting as re-sprouting from stumps and roots has been rapid and creates dense bushing growth habits. Pulling seedlings, and the use of a weed wrench has been done this year and fewer new sprouts have been observed. This method should be continued throughout the growing season for at least three years and monitoring with spot pulling done every year there after. If the population persists, or is not reduced, cutting and stump painting with glyphosate would be the recommended treatment beyond mechanical control.

Morrow's honeysuckle

Location: A few plants were found at the summit, at the back door of the lodge, the east end of the parking area, around communication towers closest to the fire tower, and at the south edge of the lower parking area. Several plants were also found at the base of the old ski area, near the old snowmaking pond, and at 87 Old Mountain Road:

0362623 4787021

0362524 4787019
0362520 4787045
0362008 4787672
0363655 4786756

Population Size: Plants total ≤200 sq. ft.

Management Plan: These shrubs are not very large and pulling is feasible and should be continued over the next four years at least twice a season to eliminate sprouting from root fragments.

Reed canary grass

Location: At the summit near and around utility pole "12" by northern most cell tower. Other small populations have been identified around the edge of the summit clearing by Vultures View, Sweet Fern, and Blueberry Trails.

0362567 4787079

0362520 4787045

Population Size: 200-300 sq. ft.

Management Plan: This grass is a rhizomatous perennial that can reach three to six feet in height. It spreads by seeds or by creeping rhizomes. It will also produce roots and shoots from the nodes of freshly cut, well-jointed culms. Mowing may be a valuable control method, since it removes seed heads before seed maturation and exposes the ground to light, which promotes the

growth of native species. Covering with black plastic is another possible control method. Application of glyphosate to new shouts after cutting has been used with success in some areas. However, with both covering and glyphosate application, re-colonization following treatment is likely since seeds can remain viable for many years.

Common reed

Location: Ditch on north side of Mountain Road at intersection of Mountain View Lane: 0363371 4785947

Population Size: 500 sq. ft.

Management Plan: There is no easy solution for controlling of this aggressive species. It is an indication of an overall environmental imbalance usually following a disturbance and high nutrient levels in a wetland area. Cutting will help to contain the population but will not eliminate it. Cut one to two times a year for the first two years and repeat every three to five years after that. Cut stems have the ability to take root in certain conditions so bagging the cuttings is recommended. Glyphosate used over two years and in a two step process is a minimum requirement for chemical control. Application should be done towards the end of the growing season as nutrients are moving from the leaves into the root system.

Multiflora rose

Location: Cedar Trail, in the small clearing between the trail and the old snowmaking pond south of the old ski lift base. 0362008 4787672

Population Size: 100 sq. ft.

Management Plan: This woody stem perennial will reproduce from its many seeds or at the tips of branches that touch the ground. Birds are attracted to the hips and spread seeds that can remain viable in the soil for 10 to 20 years. Cutting three to six times per growing season for several consecutive years can be an effective control method. Application of glyphosate in the fall is useful for killing the stems and root systems. However, since this is such a small infestation, chemical controls should only be used if cutting is not controlling or eliminating the spread.