



December 3, 2020

Select Board  
Town of Littleton

Dear Select Board Members:

Sudbury Valley Trustees' (SVT) is pleased to provide this information to you regarding the proposed management of invasive plants, specifically Asian bittersweet vine, at the Smith Conservation Land located at 199 Whitcomb Avenue. Neighbors have raised concerns about the impact of herbicide use on public and private drinking water supplies and harm to the area's wildlife.

SVT's mission is to protect open spaces and wildlife habitat for the benefit of present and future generations of wildlife and people in a 36-town region west of Boston. SVT is a nationally-accredited land trust that has been protecting and stewarding land for almost 70 years.

SVT had originally proposed to initiate the invasive plant control project at Smith Conservation Land last fall, but paused the project after neighbors expressed concerns about the proposed use of herbicides as part of the project. SVT wanted to ensure that our approach was, in fact, the most prudent and effective approach to invasive plant control that would not endanger the health of people, wildlife or the environment. Over the course of the past year, SVT conducted extensive research on the potential human health and environmental risks of herbicides and on the feasibility of non-chemical controls. SVT convened a working group composed of representatives of statewide conservation organizations and agencies (including The Nature Conservancy, Mass Audubon, The Trustees, Native Plant Trust, MassWildlife, the Massachusetts Natural Heritage & Endangered Species Program, and the Massachusetts Department of Conservation & Recreation's Water Supply Division) to explore and share resources and best practices. SVT also hired an ecologist with extensive experience in the subject to conduct an updated review of literature and documented best practices.

In summary:

1. The testing and review of the herbicides by regulatory authorities, which includes additional review in Massachusetts by the Department of Agricultural Resources (MDAR), are designed to be conservative such that the maximum allowed usage of an herbicide will not pose a risk to human health and the environment. The Massachusetts Department of Public Health is also involved in the review process. SVT and our

partners have conducted due diligence in taking a closer look at the science as well as the practices and the results. SVT firmly believes that limited use of herbicides will yield a net benefit to the habitats and not endanger human health.

2. In invasive plant management, the amounts of herbicide that are used are well below the maximum-allowed application rates and the methods of application are focused on the target plants, further assuring that the risk posed to human health or the environment is extremely low.
3. SVT hires state-licensed applicators with experience in natural areas management and only applies herbicides approved for use in sensitive areas. Cut and dab application is the primary application method. Treatments that utilize back pack sprayers allow the operators to very specifically target only the invasive plants and avoid non-target impacts.
4. The methodology that SVT is proposing to use is a Best Management Practice (BMP) for conservation land managers. The BMP includes a combination of mechanical and herbicide treatments and is used by all of the statewide conservation organizations and agencies engaged in land management as well as many regional and local land trusts and municipalities.
5. The Massachusetts Natural Heritage & Endangered Species Program (MNHESP) has formally approved SVT's management plan for the Smith Conservation Land. MNHESP reviewed the plan because the site supports vernal pools and a rare turtle species.
6. The Littleton Water Department has recently issued a statement that SVT's proposed approach is not a threat to the community water supply.

The Smith Conservation Land has numerous outstanding conservation values. Unfortunately, the property also hosts a great diversity and number of aggressive invasive plant species. Most notably, Asian bittersweet vine has spread across 22 acres of this 54-acre conservation land, severely compromising the habitat values of the site. Asian bittersweet in particular strangles trees and literally overwhelms and displaces all other vegetation in its path. If left unmanaged, the bittersweet will continue to damage the land, overcoming and killing trees and other vegetation, creating a void of healthy habitat as well as producing abundant seed sources that birds can continue to spread across the land.

The loss of diverse native vegetation poses a real and present risk to the land and to the animals dependent on diverse plant life for their survival. Invasive plants are well-documented to be the second greatest threat to biological diversity, second only to habitat destruction. SVT's goal at the property is to restore high quality, diverse habitat in the areas that have been damaged by Asian bittersweet. The restored areas will be home to a diverse collection of native plants, which, in turn, will support a myriad of wildlife, birds and native pollination systems. Native pollinators are increasingly at risk due to the direct loss of habitat, conversion

of habitat to other uses, and invasion of non-native plants. Many native pollinating insects are specialists that simply cannot utilize invasive plants. In turn, the majority of local bird species need an abundance of caterpillars to feed their young during nesting season and studies have shown that invasive plants do not support the abundance of insect food needed by birds.

*In Doug Tallamy's book, "Nature's Best Hope," the author poses the question:  
Are Invasive Plants Bad?*

*He proposes the following answer: "The preponderance of evidence says yes. Compared to native plant communities, introduced plants are bad at supporting insects and are thus bad at supporting insectivores. They are bad at supporting specialist pollinators, complex food webs, stable food webs, local biodiversity, interaction diversity, and most important of all, they are bad at supporting ecosystem function. We should no longer accept the notion that introduced plants are the ecological equivalents of the native plants they replace."*

Asian bittersweet is well-documented to be very difficult to control due to its extensive, networking root system and aggressive resprouting capabilities. While small infestations can be effectively controlled with repeated hand-pulling and mechanical removal over multiple years, it is impossible to control large, extensive and well-established invasions of Asian bittersweet with mechanical methods alone. Compounding the problem, mechanical removal will increase root growth and sprouting unless the entire plant and root system is removed or the cutting is frequently repeated during the growing season, neither of which is feasible at a large scale.

At the Smith Conservation Land, SVT has concluded that the limited and targeted use of state-approved herbicides is the most effective solution to controlling Asian bittersweet while also limiting the risk to human or environmental health. However, in response to neighbors' concerns and restrictions imposed by the Conservation Commission, SVT has reduced the area across which herbicides will be used.

SVT will maintain the following mechanical-only (no chemical) control areas:

1. 125-foot buffers around residential water wells. SVT increased this buffer by 25 ft in response to a request from the neighbors.
2. 100-foot buffers from wetland boundaries.
3. 200-foot buffers from vernal pool margins (100 ft more than conservation commission jurisdiction).
4. 50-foot buffers from residential activity areas for those neighbors who wish to have this additional setback.

In buffer areas, SVT will only use mechanical controls in an attempt to prevent the bittersweet from going to seed and to attempt to keep the vines from spreading onto the treated habitats. In the meantime, SVT is committed to continuing to research non-chemical control methods such as the root-extraction technique that has been used by an Acton resident and that has shown promising results on small areas.

Outside of mechanical-only control areas, SVT will use herbicides to treat bittersweet vine in the red pine stand (Unit 1), the mixed Norway Spruce/old field area (Unit 3), and a few areas with large bittersweet vines in portions of Units 4 and 5. These areas occupy approximately 11.3 acres and can be viewed on the accompanying map. SVT had originally proposed herbicide treatment in Unit 2 – the European Larch stand - but that is now not feasible with the wetland buffer restrictions; SVT will not attempt any management in that zone at this time.

In the treatment areas that are beyond the buffer areas, SVT will conduct a cut stump treatment with a triclopyr-based herbicide in December. Licensed applicators will use chain saws and hand saws to cut the larger bittersweet stems and then apply the herbicide to the cut stem with a handheld applicator. In the following summer, a spot spray treatment will be conducted to control low-growing dense bittersweet (whose stems were too small to cut and dab) and any resprouts from bittersweet roots. The water-based mix contains triclopyr and metsulfuron methyl. The treatments will utilize back pack sprayers that allow the operators to very specifically target the invasive plants and avoid non-target impacts. These follow-up treatments are much smaller in area and in volume of herbicide used compared to the initial cut and dab. Additional follow-up summer treatments will be conducted ONLY as needed to control any resprouting bittersweet. Backpack spraying would be limited to three applications at maximum. Hand-pulling seedlings will be conducted in between treatments. As noted above, all treatments will be conducted by licensed applicators experienced in treating natural areas.

It is important to emphasize that the method of spraying is very limited and controlled to patches of leaves. It is not aerial spraying nor boom spraying. The very limited use of herbicides will be more effective and will help us achieve a level of control whereby we can later switch to mechanical only.

SVT have observed the use of the backpack sprayers and has been impressed with the very low level of non-target impacts. The pressure in the backpack sprayers is adjustable. The sprayer wands apply the treatment in a narrow angle and flat fan pattern, so the applicator can be very directed at small targets, especially with lower pressure. Our applicator states that “Since we generally get rather good control in the first cut stump treatment, the amount of herbicide applied in follow-ups is very small in comparison.”

As we eliminate the invasive species and encourage the growth of native plants, including application of native plant seed mixes in some areas, then the native plants will gain an advantage and be able to compete with the bittersweet as long as we continue with regular manual control. That manual control goes on for many years because of the seed bank of bittersweet.

*“We have allowed alien plants to replace natives all over the country. Our native animals and plants cannot adapt to this gross and completely unnatural manipulation of their environment in time to negate the consequences. Their only hope for a sustainable future is for us to intervene to right the*

*wrongs that we have perpetrated.”*

— Douglas W. Tallamy, *Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens*

Given a legacy of chemical pollution that has impacted our environment over the years, we understand and appreciate the the close scrutiny of any proposed use of herbicides. Prompted in part by our neighbors’ concerns as well as our own desire to ensure we were doing right by the Smith Conservation Land, we spent the last year doubling down on our research on the potential harmful impacts of the proposed herbicides and investigating non-chemical control methods. We appreciate the passion that the neighbors have demonstrated for a healthy environment – a passion which SVT shares.

SVT believes it is important for the Select Board to have good information on the proposed project and the science that has informed the approach. *On the attached pages*, we present some corrections to information presented by the neighbors in their letter to the Select Board dated November 13, 2020 and sent via email. SVT’s [web page](#) provides additional information including our literature review and bibliography

SVT appreciates this opportunity to communicate with the Select Board on this very important matter.

Sincerely,

A handwritten signature in blue ink that reads "Vernegaard".

Lisa Vernegaard  
Executive Director

cc: US Representative Lori Trahan  
Mass. Senator Jamie Eldridge  
Littleton Conservation Commission  
Smith Neighbors and Stakeholders

**Correction and Context for information presented by the Smith Neighbors to the Littleton Select Board via email from Kaedra Walsh November 13, 2020.**

- Quote from neighbor letter:  
*"We had earlier been assured that only cut-and-dab applications of triclopyr would be used. In response to this reversal of SVT's prior assurance, a group of neighbors and community members requested a meeting with the SVT Board of Directors to discuss our concerns. SVT refused to meet with us ..."*  
Correction:  
SVT never assured the neighbors that only cut-and-dab application techniques would be used and therefore there was never a reversal of our approach. The SVT Board has been informed of all decision-making and of concerns expressed by neighbors. Last year, the Board created a sub-committee specifically to provide guidance to staff on the project as it relates to neighbors' concerns and that subcommittee has remained actively involved in the project. Several board members attended the neighbor meetings.
- Quote from neighbor letter:  
*"The 26 acres of land that would be subject to yearly spraying has portions within the 100-year flood plain."*  
Correction:  
The original area of management contemplated was 26 acres. At this time, the herbicide applications will be limited to 11.3 acres. The herbicide treatment will include one cut and dab application followed by no more than three low-volume spray applications that will target only patches of bittersweet growth, not the entire acreage. No portions of the treatment areas are within the 100-year floodplain.
- Quote from neighbor letter:  
*SVT applied for and received a federal, taxpayer funded grant to apply these chemicals. Alternative effective methods are not covered by the grant, thus making it cheaper to spray.*  
Correction:  
SVT was awarded a contract with the USDA Natural Resource Conservation Service's Environmental Quality Incentives Program to restore habitat. The program will reimburse SVT on a per acre basis for approved treatment methods, which include cut-and-dab and limited spray applications. The program came to a similar conclusion as SVT and our partners that mechanical treatment alone is ineffective.
- Quote from neighbor letter:  
*"Littleton has sold multiple parcels of land to Sudbury Valley Trustees."*  
Correction:  
The Select Board is likely aware that the Town of Littleton has not sold any parcels to SVT. In fact, SVT has been proud to partner with the Town and the Littleton

Conservation Trust to help protect open space and conservation land in the town, such as the recent partnership to protect the Brown Woods.

The neighbors provided an additional document entitled “Triclopyr Concerns” which includes a multitude of quotes from various scientific documents and is not a comprehensive analysis. The document selects quotes that raise alarms but that do not provide full information or context for the studies that it references. Below SVT references two of the most relevant quotes from that document and offers corrections.

Particularly relevant to the proposed management at Smith is the 2010 study done by MDAR chemist Hotze Wijnja for Barnstable County. The Neighbor document states that the study “did not rule out contamination of groundwater from triclopyr or metsulfuron methyl.”

<http://www.barnstablecounty.org/wp-content/uploads/2010/09/Fate-of-Herbicides-in-Carver-Soil1.pdf>

**In Fact, the study came to the following conclusions:**

- *ROW herbicides are applied at relatively low rates*
- *Simulated concentrations in ground- and surface water are well below health-based and ecological standards*
- *These low exposure levels indicate minimal risk to human health and non-target organisms*

**Further Reduction of Exposure**

- *Simulations represent worst-case scenario or high-end of exposure potential*
- *Exposure is reduced by limited-spray zones and no-spray zones*
- *No-spray zones include: – 50 ft from private well – 10 ft from surface water or wetland*

**Conclusion “At the rate and with the method of application, the herbicides used in the rights-of-way area in Eastham will not result in herbicide concentrations in ground and surface water that would cause harm to humans and aquatic wildlife.”**

From the Neighbor Document:

EPA Proposed Labeling Changes for Metsulfuron methyl, 2016 “Metsulfuron methyl is known to leach through soil into groundwater under certain conditions as a result of label use. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.”

Environmental Hazard section of Precautionary Statements Surface Water “This product is classified as having high potential for reaching surface water via runoff for weeks after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of metsulfuron methyl from runoff water and sediment”

[https://www3.epa.gov/pesticides/chem\\_search/reg\\_actions/interim-reg-review-decision\\_30-Jun-16.pdf](https://www3.epa.gov/pesticides/chem_search/reg_actions/interim-reg-review-decision_30-Jun-16.pdf)

From MDAR and MDEP Review of Metsulfuron Methyl

*SUMMARY: Metsulfuron methyl has a moderate to high mobility in the soil profile and is relatively persistent in the environment, especially when applied in the fall. These factors would be of concern under most circumstances. **HOWEVER**, metsulfuron methyl is applied at very low rates (3-4 oz/Acre) and therefore the amounts which reach the soil are quite low. Consequently, Metsulfuron methyl should not impact groundwater as a result of leaching or migrate from the target area.*