

**Smith Conservation Land  
Habitat Management  
Update  
July 8, 2021**

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The purpose of this update is to inform the Littleton Conservation Commission and other community members of the current status of the Smith Habitat Management project. This update compliments and expands upon the information on SVT's Smith Habitat Management [web page](#), and will also be posted on the web page.

SVT has invited several professional restoration ecologists to visit the site and provide their recommendations. In addition to staff from the USDA NRCS, the site has been evaluated by Marianne Piche, Habitat Biologist with MassWildlife and Chris Polatin, Principal at Land Stewardship Inc. This past April, the site was additionally assessed by Dan Bove, Restoration Ecologist with Massachusetts Natural Heritage & Endangered Species (MNHESP) and Tim Simmons, Ecological Consultant (and former Restoration Ecologist with MNHESP). All those who have visited the site consider it to be very degraded and very challenging due to the extreme invasion of bittersweet and other invasive plants as well as the large area of the invasion. Some question the ability to succeed. However, given the likelihood that the bittersweet will soon begin to topple dying red pines, and then will begin to also take down other sturdier trees, SVT believes it is important to take action to address this situation. Our primary goal is to improve wildlife habitat for plants, pollinators, and birds. A secondary benefit will be to improve aesthetics.

SVT staff have explored a multitude of control strategies and combinations of strategies, as indicated in some of our earlier documents and the contents of our web page, "Smith Habitat Management." While we continue to fine-tune and adapt our strategies based on actual practice and results, the summary below provides a current update. We will be preparing a matrix of control options with pros and cons this month; we will share that matrix when it is complete.

Non-Asian Bittersweet Invasive Plant Control

SVT initiated manual removal and control of invasive plants in April. SVT hosted several staff and volunteer pulls of the "FAB-4 Forbes" in late April and early May in Management Unit 4, on the west side of Whitcomb Avenue. The FAB-4 invasive plants include garlic mustard (*Alliaria petiolata*), narrow-leaved bittercress (*Cardamine impatiens*), Dame's rocket (*Hesperis matronalis*) and greater celandine (*Chelidonium majus*). We also added the removal of wall lettuce (*Mycelis muralis*) in this same area. These plants are best pulled in the early spring before they go to seed. It will require many years (10+) of repeated efforts to control these plants. (We applied 44 person-hours across 3 acres). SVT is *not* attempting to manually remove

these plants on the east side because the plants are even more established and cover a larger area on the east side of the road.

On the east side of Whitcomb Avenue there is a somewhat contained population of black swallow-wort. Unfortunately, in spite of digging up the plants the last few years (by a dedicated LCT volunteer) they are continuing to spread. We are attempting a more thorough digging this year to see if we can obtain better control.

#### Asian Bittersweet Control - Manual

On April 10<sup>th</sup>, SVT hired Asian Bittersweet Removal (Noel Herman) to provide a training to SVT staff and volunteers on their bittersweet root removal technique, SVT refers to as the “root excavation” technique. The participants included 3 SVT staff, two SVT Americorps members and five volunteers. The technique recommended by ABR includes a limited amount of dabbing with triclopyr for roots that go deeper than 1 foot. Due to the Conservation Commission restrictions within the wetland buffers, SVT is not able to follow Noel’s approach to combine pulling with targeted use of triclopyr and is attempting manual-only methods in part of the project area.

SVT demarcated three manual control areas in the red pine plantation ([see map](#)). One area is the semi-circle buffer area to the residential water wells to the north (0.3 acres). The extent of bittersweet in the semi-circle was not too dense so we were able to accomplish the removal with staff and volunteers in 12 person-hours. We used the root excavation technique in this area.

The other two manual control areas are within the wetland buffer to the Beaver Brook marsh. We divided that wetland buffer into two equally sized areas (0.4 acres each) so that we can compare two different manual control techniques. In the southern half, we are using the repeated cutting/pulling method, known as “carbon starvation,” recommended by Got Weeds (Mike Bald). In the northern half, we are using the root excavation technique. In each area, we established a 30-ft diameter monitoring plot and recorded baseline data on plant species and cover in each plot. We will monitor the vegetation changes in the plots annually and compare results over at least five years.

SVT believes the root excavation method will be more effective based on our observation of its success at a site in Acton and on the merits of the almost complete root removal. However, such a high level of soil disturbance has been proven to stimulate invasive plant growth and may impact the recovery of native plants at the site.

SVT hired an SCA Americorps member to focus primarily on this project. Unfortunately, the member had to discontinue her service for personal and unexpected reasons. Despite regular efforts to involve more volunteers in the root excavation and cutting of bittersweet at Smith, our Weed Warriors (invasive plant control volunteers) have shown very little interest. We suspect at least two factors are at work here: first, there’s a lot of poison ivy on the site, and second, as COVID restrictions have lifted, more activities have competed for volunteers’ time.

Regardless, we have been disappointed in lackluster volunteer participation and this tells us that we will need to hire and train more people to do this type of work in order to achieve our desired results.

SVT hired two summer Stewardship Field Assistants. One began on June 1 and the other on July 1. Both will work until August 20<sup>th</sup>. Removal of invasive plants, particularly bittersweet at Smith is one of their primary responsibilities.

An additional challenge to the root excavation (and repeated cutting) method at this site is the abundance of poison ivy and ticks. Both of these factors make it more challenging to recruit workers and keep them safe. Certainly, it is a turn off to volunteers.

Within the northern root excavation area, our progress has been slow due to both the number of other plant roots that we have to work around and the insufficient people power that we have been able to recruit. We intend to make a significant increase in labor hours to this effort over the remainder of the summer.

In the northern excavation area, we have invested 21 hours and have removed bittersweet in less than half of the area. *At this rate it will take approximately 100 hours per acre to excavate the bittersweet roots.* We have contracted with Asian Bittersweet Removal to come back to the site and provide additional technical support to ensure that we are maximizing the effectiveness of this technique.

The carbon starvation work took 9 person-hours to complete for the 0.4 acres. The bittersweet resprouts vigorously from the cut stumps. Mike Bald had recommended cutting the vines high up to make it easier to do repeat cuttings, however, we found that the bittersweet sprouts along the entire length of the stem that is above ground. We intend to repeat the cutting at least three times per growing season.

#### Asian Bittersweet Control – Goats

SVT acquired a second quote from a goat herdsman to conduct biological control of Asian bittersweet. As expected, the two proposals were costly {\$ 32K for 2 years for 8.6 acres or \$ 60K for 5 years for 16 acres). SVT was hoping to work with this contractor over a portion of the site, but he is moving to central Massachusetts and will only be working in that area. While the use of goats does not provide targeted control, we were interested in using animals in the first phase of reducing the overall coverage of the bittersweet, which would then be followed by other forms of control. Thus, SVT will continue to explore this possibility. SVT is in communication with others in the community about potential for goat grazing and control.

#### Asian Bittersweet Control - Herbicide

A site-specific [Risk Assessment](#) was prepared of the Limited Herbicide Use for Control of Asian Bittersweet at the Smith Conservation Land, dated July 1, 2021. The Assessment was prepared by Deborah Listernick, a Senior Risk Assessor. Ms. Listernick included information from EPA's

Interim Review to inform her assessment. Ms. Listernick was able to include more specific information about the local residential water wells and the Town's public water supply.

Ms. Listernick's report includes the following conclusions:

- *“concur with previous conclusions from SVT that the site-specific methods and amounts (application rates) of proposed herbicide use are in accordance with or more protective than application and license requirements in the area of use with precautions for spray drift and runoff.”*
- *The SVT plan meets and exceeds the MDAR requirements for specified buffer zones to the identified sensitive areas.*
- *The SVT plan specifies buffer zones around sensitive receptors ranging from 50 to 200 feet, with the buffer zones for residential water wells and vernal pools greater than required by MDAR.*
- *All resources identified at the Smith property are greater than 50 feet from the application site. Therefore, an application rate of 3 pints per acre or less of Triclopyr would be protective of identified sensitive receptors following these MDAR requirements.*
- *These estimated application rates for triclopyr are significantly less than the maximum label application rates from 6 lbs/Acre to 9 lbs/Acre, and less than application rate for sensitive resources of 3 pints (48 ounces)/acre with buffer zones greater than 50 feet to sensitive receptors. Site-specific water resources are located 100 to 200 feet from the application area.*
- *Based on the findings of two relevant Massachusetts studies and site-specific information on application rates, details of locations and depth of public and private drinking water supply wells, and no spray zones, impacts to drinking water are highly unlikely.*
- *Exposure Mitigation Measures - As mentioned previously, application at the Site will be far less than maximum label application rates. Herbicides use by licensed applicators in accordance with EPA label requirements, including those for application weather conditions, use of PPE, spray drift management and no spray zones, and targeted applications will minimize potential general and incidental exposures to humans and the environment.*
- *Based on the toxicological studies of triclopyr and metsulfuron methyl, the proposed application rates at the site, and potential herbicide or derivative migration, the expected exposure to any non-target plants, wildlife or humans is extremely low, if any.*

### EPA's Review of Triclopyr

EPA has not released a final decision on the registration review of triclopyr. The EPA may issue an interim decision as part of the registration review so that it can (1) move forward with aspects of the registration review that are complete and (2) implement interim risk mitigation. Certain aspects of registration, such as the endangered species act requirement and the new endocrine disruption screening program need additional time since these protocols for these aspects were only recently finalized and implemented.

Further information relative to the remaining aspects of the registration review on Triclopyr is described on p. 38 in the Triclopyr Interim Decision:

*In accordance with 40 CFR § 155.56 and 155.58, the Agency is issuing this Interim Decision (ID). Except for the Endocrine Disruptor Screening Program (EDSP) and the Endangered Species Act (ESA) components of this case, the Agency has made the following interim decision: additional data are required and changes to the affected registrations and their labeling are needed at this time, as described in Section IV. A and Appendices B and C.*

*In this ID, the Agency is making no human health or environmental safety findings associated with the EDSP screening of triclopyr, nor is it making a complete endangered species finding. Although the Agency is not making a complete endangered species finding at this time, the mitigation described in this document is expected to reduce the extent of environmental exposure and may reduce risk to listed species whose range and/or critical habitat co-occur with the use of triclopyr. The Agency's final registration review decision for triclopyr will be dependent upon the result of the Agency's ESA assessment and any needed § 7 consultation with the Services and an EDSP FFDCA § 408(p) determination.*

#### Next steps:

Given the results of the EPA Interim Decision (which includes proposed new regulations) and the conclusions of the Site-Specific Risk Assessment, SVT intends to conduct the cut-stump treatment of bittersweet across the 11 acres of the management area that is located outside of wetland resource buffer areas. The application would occur in the fall of 2021 by certified applicators with experience in management of natural areas.

Given the long-odds of success with mechanical-only treatment and the conclusions of the risk assessment, SVT would like the conservation commission to re-consider its prohibition of the use of the cut-stump treatment within the wetland buffer areas and would like its approval of the original proposal which was recommended by MassWildlife, MNHESP and the USDA NRCS. This would also include reducing restrictive buffers around the vernal pools to 100 ft., given that the rare species biologists do not have concerns about the careful use of the herbicides in this area.