

Volunteers Rescue 4,000 Trees from Killer Vines Using Novel System for Surveying Threatened Trees in Takoma Park, Maryland

A Report from the Takoma Tree Saver Program

July 2022





Executive Summary

Using a first-of-its-kind system pioneered here in 2021, hundreds of volunteers in Takoma Park, Maryland have systematically rescued more than 4,000 trees previously identified as dying from invasive vines such as English ivy (*Hedera helix*). Meeting on Saturday mornings for just over a year and equipped with simple garden clippers and pruning saws, the volunteers have now saved 80% of the infested trees in this city of 18,000 people, creating a blueprint for communities nationwide.

The 4,000th tree – a 75-year-old red oak – was rescued by volunteers on June 30th. Now, in a city where dying trees were once a common sight on both public and private land, it is rare to see any trees choking from such killers as English ivy, Wintercreeper (*Euonymous fortunei*), Porcelainberry (*Ampelopsis brevipedunculata*), Oriental bittersweet (*Celastrus orbiculatus*), Chinese wisteria (*Wisteria sinensis*), and others.

"It's not an exaggeration to say this city has been transformed," said Mike Tidwell, CCAN executive director and a resident of Takoma Park. "We had dying trees everywhere – downtown, on playgrounds, around city hall. Now it's much harder to find such trees. That's good for homeowners, for public health, for local ecosystems, and for the global climate."

Two steps were key to this success, according to the report released today. First, CCAN commissioned a trained invasive plant specialist to walk and visually survey all 36 miles of streets and roads in the city during wintertime, when many evergreen vines are starkly visible. Five thousand mature trees – from age 20 to more than a century – were determined likely to die within 5-7 years without action. Using this data and the recorded tree locations, volunteers then set out block-by-block and park-by-park to safely cut, clip, and saw vines.

According to an extensive internet search, **no baseline survey of dying trees like the one undertaken in Takoma Park had ever been done before in the United States**. This simple walking survey, using a smartphone to record the location of every infested tree, gave volunteers a sense of the scale of the problem and gave them a way to chart progress. Just over a year later, only about 1,000 infested trees remain, mostly on private land where permission to access has not yet been granted. Efforts are ongoing to rescue these remaining trees.



Background

Trees are one of our best solutions for combating climate change by sequestering carbon dioxide. They also provide countless other benefits to people and wildlife, including helping to filter air and water, controlling stormwater, conserving energy, and providing wildlife habitat. They reduce noise and provide places to recreate while strengthening social cohesion, spurring community revitalization, and adding economic value to communities. However, non-native invasive plant species, particularly vines, pose a significant threat to trees.

With this in mind, in February 2021, the Chesapeake Climate Action Network (CCAN) commissioned what may be the first <u>assessment</u> of its kind in the nation. An invasive plant specialist walked all 36 miles of the streets and adjacent areas of Takoma Park, MD, directly identifying nearly 5,000 trees in the process of being overwhelmed by invasive vines like English ivy. The startling results in a small city known to highly value its tree canopy likely signals that the scale of invasive vine destruction in similar towns nationwide is far beyond previous assumptions. The study also identified relatively low-resource, commonsense solutions to the problem. Many of the trees in the survey can be saved in 10-15 minutes by volunteers using common garden clippers and pruning saws.

Shortly after the study's release, a formal volunteer program - Takoma Tree Savers - was launched to tackle the vine problem in Takoma Park. Community events were organized nearly every Saturday morning and volunteers spent up to three hours cutting invasive vines on public and private property. This unique program – singularly focused on freeing trees of invasive vines – garnered the attention of the press and was featured on the local NPR station, <u>WAMU</u>, and in <u>Maryland Matters</u>. It also received a commendation from the City of Takoma Park in the form of a formal proclamation acknowledging CCAN's work.

The Takoma Tree Saver program has now reached a remarkable milestone: volunteers have cleared vines from 4,013 trees in Takoma Park - over 80% of those identified in the original assessment. It has done this through hosting 44 Saturday morning events while engaging over 334 volunteers, including 191 unique volunteers, and resulting in more than 44,000 volunteer hours¹ contributed towards the community. And this number does not include the many hours spent by individual volunteers dedicating time during the week to follow up with neighbors to remove vines from their trees.

This program update provides a status report on the program, shares lessons learned, and hopefully can serve as a roadmap for other jurisdictions and citizens' groups that seek to create similar programs.

¹ Assumes an average of 3 hours served per volunteer (334) multiplied by 44 workdays.



Launching a Community-Based Program

Shortly following the release of the assessment, CCAN launched the Takoma Tree Saver Program in early April of 2021. CCAN developed a <u>website</u> dedicated to the program. CCAN interns used the master address list of all properties in Takoma Park to create data sheets (or address lists) with 10-20 addresses of homes where trees significantly affected by invasive vines had been observed during the assessment phase. The <u>Mobilize</u> volunteer event management website was used to manage sign-ups and communications with volunteers. Vine cutting events were held regularly every Saturday morning from 8:30 to 11:30. Aside from occasional cancellations for holidays, staff limitations, and inclement weather, the regularity of these events certainly contributed to regular volunteer turnout. After the program launched, there were a number of volunteers who became "regulars", individuals who knew that they could always be assured of an event. There also appeared to be some level of word-of-mouth participation.

The day before each event, an email was sent to participants. The email included details on the meeting location (if different than the regular meeting location), what to expect, what to bring, and tips for how to ID and remove invasive vines as well as how to distinguish native vines from invasive ones.

Each event started with sign-ins, including a waiver/participant list and tool sign-out sheet. Following signing-in, staff and volunteers made introductions, a brief description of the problem of invasive vines was given, which was then followed by a short training on vine cutting techniques, target species, and native species to avoid. Finally, a discussion about safety was given. Individuals or small groups were then given pre-printed address lists and neighborhood maps (e.g., data sheets). While people were encouraged to bring their own tools, they were given gloves, pruning saws, and pruners, if needed. CCAN staff also had sunscreen, bug spray, and Tecnu on hand in case volunteers came into contact with poison ivy.

Volunteers were provided a script to recite when meeting homeowners, as well as fliers to hand out if homeowners were not home. The <u>fliers</u> described the problem of invasive vines, and directed homeowners to CCAN's email address and website. After volunteers were sent out to respective neighborhoods, staff would stand by for questions and concerns. After volunteers had finished their lists, or 3 hours had elapsed, they were encouraged to either drop off their printed sheets with results, or to send photos of the sheets. CCAN staff then entered data² into a master spreadsheet as well as electronic copies of the handout address lists.

The number of volunteers participating in these events usually averaged around 10-12. After a few weeks of home visits, it became obvious that there was a significant range in results by volunteers. While some volunteers were able to quickly move through their lists, others made slower progress. It also seemed that homeowner responses were relatively low. That is, people were generally not home on Saturday mornings. This could also be due to the fact that COVID-

² Data collected included: if contact was made with homeowner, how many trees were freed of vines, and if any follow-up was needed (e.g., visit again, call back, etc).



19 vaccinations were relatively recent and people were still hesitant to open their doors to strangers. Because of these low response rates, vine removal rates were low.

Because of what seemed to be low response rates, CCAN decided to pivot from homeowner visits to leading group events in parks and other public areas. This proved to significantly increase the numbers of trees that volunteers were able to free from vines during the allotted time. Group events in parks and other public properties continued through the summer into the fall and winter months.

Communications

Several different fora were used to publicize the program. Initially, the program was publicized using CCAN's database of all contacts within the Takoma Park zip code. This list was also used at varying points throughout the year to communicate about volunteer events and program updates. Local community email listservs and the Takoma Park Facebook group were also used to promote weekend events.

At least two Takoma Park City Councilmembers sent out notices advertising the program in their weekly newsletters to constituents. The Takoma Park City newspaper published a story about the program in May of 2021, likely spurring interest in the program. The Montgomery County Volunteer Center listed the volunteer opportunity, as well, which appeared to attract volunteers from throughout the County. The opportunity for middle and high school students to earn service learning (SSL) hours also may have made it attractive for students (or more likely, their parents).

Additionally, CCAN helped the City of Takoma Park develop a <u>webpage</u> dedicated to educating residents about the threat of invasive vines in its Tree Care and Resources section.

Lastly, for volunteer events that took place on Montgomery Parks property, the event was posted on the Montgomery Parks Weed Warrior <u>webpage</u>. This proved to drive significant traffic to CCAN's events from throughout the County.

Program Results

At a Glance:

- 44 events (April 2021-June 2022)
- 334 volunteers engaged³
- 191 unique volunteers
- 4,013 trees saved

³ Includes repeat volunteers



Trees Freed from Invasive Vines	Total Freed	% of total trees ID'd (5064)
All property types	4013	79.3%
On public property	2342	46%
On private property	1671	33%
Homeowner visits	Total	% of total (840 homes)
Number of total homes visited	575	68%
Number of homes not visited	265	32%
Number of homes contacted (i.e. contact made with resident)	273	47% (575)
Number of homes that agreed to have vines removed	202	74% (273)

Table 1: Key program statistics

A total of 4,013 trees were freed from invasive vines between April 2021 and June 2022. This represents 83 percent of the total identified in the 2021 assessment and 79.3 percent of the total of trees identified, post-assessment (5,064)⁴. Most of these trees (2,342 or 46%) were on public property, the majority of which was parks. The remainder (1,671 or 33%) was on private property, the major part of which was single-family homes.

Volunteers and staff visited 575 of the 840 single-family homes (68%) in Takoma Park where trees severely affected by invasive vines were detected. Of the homes visited, contact was made with a resident at 273 (47% of 575) homes. Of the homes where contact was made, 202 (74%) agreed to let volunteers and staff remove invasive vines. There was a small percentage of homes where either the homeowner said that they would attend to their invasive vines or had done so already. These trees were counted in the totals above, though it was difficult to verify if the work was completed.

It should be noted that 20 properties (and respective trees) were added to the total during the vine removal phase. For example, if a volunteer visited a home and noticed that the adjoining property had affected trees, yet the adjoining property was not on the original list, if permission was granted to remove vines, that home - and its trees - were added to the list. This explains, in

⁴ 4850 trees were identified in the original assessment. However, 213 additional trees were found and added to the total during the course of home visits, bringing the total to 5064.



part, the difference between the original assessment number of 4,850 and 5,064. This difference is also explained by volunteers and staff encountering more affected trees than originally identified at certain homes.

Similarly, on numerous occasions (primarily in parks), more trees affected by vines were discovered - and cleared - during the workday. For example, if a park section with 50 previouslyidentified trees turned out to have 100, volunteers would remove vines from all 100 trees. In some cases, trees that may not have been counted in the original assessment because they were not considered to be "severely affected" were also cleared. While the number of trees freed was counted, the delta between original and new amount was not added to the original count. This means that there are likely more trees remaining to be saved than the 1,051 (20%) indicated above.

Discussion and Lessons Learned

Home visits

While volunteers made contact with just under half of homeowners, the positive response rate - a resident agreeing to let volunteers remove vines - was relatively high at 74%. This bodes well for a program such as this to continue to try and reach homeowners (i.e., make a second visit to homes not contacted). The program did not track whether positive responses were a result of direct contact between volunteers and residents, or if they resulted from fliers left at homes. Doing so could lead to a more detailed understanding of the importance of direct communication.

Multi-family units and apartment buildings proved to be one of the most difficult and consequential property types to address. Many smaller multi-family apartments as well as larger apartment buildings had significant invasive vine infestations on mature canopy trees. However, it was difficult to establish contact with property owners or managers. In a few cases, tenants in smaller multi-family units were able to secure permission to cut vines, but in most cases, there was no response. As discussed in the original report, it is likely that tenants have little agency to either address the vine problem, or communicate CCAN's services to landlords.

Lessons learned:

- For homeowners that refused CCAN's offer, but said they would address their vinecovered trees on their own, it would have been helpful to collect contact information in order to follow up with an email asking if they had done so, and if they needed any help finishing the project.
- It is important to pair more experienced volunteers with inexperienced volunteers. In particular, teenagers may lack confidence when approaching and communicating with homeowners, and having an adult to support them and help with plant ID is important.



When homeowners allowed volunteers to conduct work on their property, there were varied levels of interest. It stands to reason that they would not allow the work if there wasn't at least a certain base level of interest in protecting their trees, the environment, or the climate. However, some homeowners take an intense interest in how the vines are removed, while others have less interest. After the program was underway, it became obvious to CCAN staff and volunteers that showing the homeowners how to safely remove vines themselves was the only way to make the program sustainable. Since that time, volunteers have showed homeowners the correct way to remove young vines and encourage them to do so when necessary. Staff and volunteers also follow up with an email to homeowners that suggests regular review of trees and promotes the planting of native plants after invasives have been removed.

The program's success is also partially due to a small group of extremely dedicated volunteers. While some of these volunteers have repeatedly attended events, others have committed to going door-to-door and conducting follow-up work when requests are made. For follow-up work, CCAN maintained a running list of requests and status that was shared with volunteers.

Lastly, the Takoma Tree Stewards component of the program appears to be still gaining traction. While a few people have signed up, there is certainly promise for it to be instituted throughout Takoma Park, as well as other jurisdictions. Volunteer Takoma Tree Stewards "adopt" their neighborhood and attend to their neighbors' threatened trees, serving as "boots on the ground." CCAN provides these volunteers with lists of addresses with threatened trees and the Stewards can attend to these trees at their own convenience. This model may be appealing to people who want to engage with the program but cannot join events on Saturday mornings. An added benefit is that homeowners with threatened trees are visited by their neighbors, as opposed to strangers.

Group events

Group events in public areas with large numbers of affected trees proved to be the most productive in terms of trees saved. In particular, events that targeted a particular adjoining neighborhood seemed to be the most well-attended. People feel personal connections to their parks and being able to engage in a stewardship activity in these areas was likely meaningful to them.

While group events were productive, volunteers would sometimes miss vine-covered trees, or only partially address the vines on a particular tree, cutting some while leaving others. From the volunteer leader perspective, it is difficult to supervise the removal of every single invasive vine in a group event. In some cases, volunteers rightfully avoided vines where poison ivy was intertwined with invasive vines. However, more instruction on finding vine-covered trees may have been needed. While evergreen vines (English ivy and wintercreeper, see photos 1 and 2) were generally easy to spot in the winter months, they became less so during the spring and summer months. Conversely, deciduous vines were often difficult to see in the winter months. In other cases, some vines were simply hiding in plain sight, and novice volunteers couldn't always be expected to spot them (see photos 3 and 4).





Photos 1 and 2: Common evergreen invasive vines, English ivy (Hedera helix) and Wintercreeper (Euonymus fortunei)





Photos 3 and 4: An invasive vine hiding in plain sight - one of these is an invasive vine.



Lessons learned:

- If possible, conduct outreach prior to the event in adjoining neighborhoods in order to boost turnout and encourage a stewardship ethic with neighbors and frequent users of that area.
- Supervision at group events was incredibly important for:
 - Ensuring proper vine removal technique, especially for large, established vines. It is easy to cut the tree's bark and damage the tree. Volunteers should always be careful that they observe both sides of the cut while sawing so they can judge whether they are about to cut the tree's bark. Also, it became obvious that volunteers sometimes had trouble getting through very thick vines.
 - Helping volunteers distinguish native vs. invasive vines. While learning to ID the two main evergreen invasive vines - English ivy and wintercreeper - was relatively easy, there are numerous native vines, particularly in natural areas, which novice volunteers often did not recognize. Positive ID of beneficial natives is required especially when conducting work on parklands. Printed ID guides or keys would be helpful.
 - Similarly, care should be given to identifying invasive vines when intertwined with poison ivy, and being able to safely address the invasives while avoiding poison ivy. (see photo 5 below)



Photo 5: Wintercreeper entwined with poison ivy - can you tell the difference?

• When volunteers were working over a large area, it was important to establish times for check-ins and departure times in order to: 1) collect tools; 2) debrief on the experience; and, 3) tally how many trees were freed.



• While many trees can be freed in a matter of minutes, some can take over an hour, and in some rare cases, many hours (see photo 6). This can impact group work and expectations of how many trees can be freed in a certain amount of time.



Photo 6: This tree was completely covered with English ivy and required the work of two volunteers over many hours.



Photo 7: Trees "freed" from English ivy in a local park in Takoma Park, six months after being cut by volunteers.

Observations on Program Impact

The Takoma Tree Saver program has clearly inspired people both within Takoma Park and around the region. In Takoma Park, it appears to have struck a chord with the public. The work of CCAN's volunteers is obvious around town, as evidenced by dying vines, and appears to be



catching on - there are signs that people are undertaking vine cutting on their own outside of the program.

There have been numerous inquiries from people and organizations wanting to adopt CCAN's model or simply learn from our experiences. CCAN staff have presented to multiple organizations and consulted with various groups throughout the region. At the time of this writing, staff are preparing to train at least two community groups in nearby jurisdictions.

It is obvious that people's participation in this relatively simple climate action energizes and empowers them, and they are transferring this enthusiasm to others. It appears to be successful because, primarily, it is a tangible climate action that people can take relatively simply. People can see the results of their labor, it is tactile, and it engages people in saving their beloved urban forest.



Photo 8: One of CCAN's summer interns removing a champion Chinese wisteria vine

The importance of the program's partnership with

Montgomery Parks and its Weed Warrior program cannot be overstated. The Weed Warrior program helped direct volunteers to CCAN-led events and provided trained - and trainee - Weed Warriors who provided assistance during events. Last but not least, 1706 of the trees freed in Takoma Park were on Montgomery Parks property.

Next Steps

At this time, CCAN is planning to continue supporting volunteer efforts in Takoma Park on a limited basis. A list of priority properties has been drafted, as well as a list of the homes that have yet to receive a visit. There are dedicated CCAN volunteers who continue to visit homes and work within their neighborhoods to help their neighbors address invasive vines.

CCAN also conducted an assessment of properties in the Takoma neighborhood of the District of Columbia. Initial efforts have been made to start organizing volunteer groups in that neighborhood.

Lastly, CCAN will continue to share its experiences with others and has scheduled trainings for nearby jurisdictions and neighborhoods. More than anything, CCAN feels that the communitydriven model for invasive vine removal developed in Takoma Park can be applied easily to other jurisdictions across the country. CCAN stands ready to share its insights with other groups.

For more information, contact:

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https://chesapeakeclimate.org/invasive-species/