

Protecting the Health of Cold Spring Park Forests: Invasive Cork Tree Control

A Public-Private Partnership

Prepared by Jon Regosin Ph.D., January 12, 2026

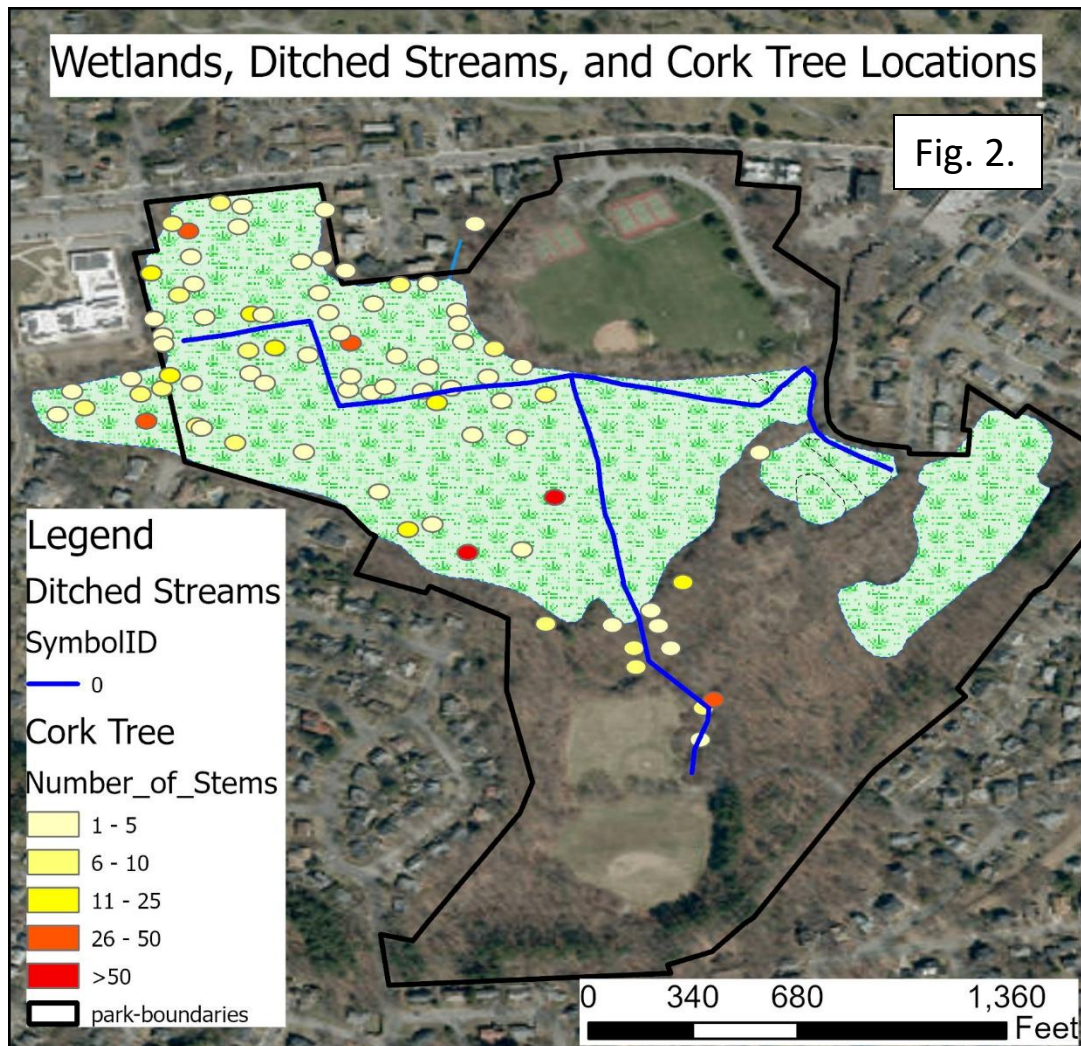
Project summary – The City of Newton, Department of Parks, Recreation, and Culture, Friend of Cold Spring Park, Inc., and Newton Conservators, Inc. propose to protect and restore the health of one of the largest remaining forested wetlands in Newton by removing invasive Amur cork tree. Cork tree can form dense colonies and dramatically alter the ecology of the red maple swamp. By systematically removing cork trees using state of the art techniques and committing to short and long-term follow up, this project will serve as a model for community-led efforts to protect and steward urban forest habitat for biodiversity conservation and public enjoyment.



Project site – Cold Spring Park (CSP) is a 69-acre multi-use park managed by the Newton Department of Parks, Recreation and Culture that provides many opportunities for residents to enjoy nature, exercise, play sports, shop for locally grown food, and more (Fig. 1). CSP's natural resource value derives from its many ecosystem services as well as the educational, health, and social opportunities it provides. Located at the center of the city, CSP's forests, vernal pools, brook, wetlands, and open fields provide a dramatic contrast to the residential properties that dominate the surrounding landscape. Undeveloped lands, particularly areas dominated by native species, support wildlife, provide clean air and water, flood protection, sequester carbon, and reduce residential cooling needs. CSP is a birding hotspot, with 174 species identified on eBird. Natural areas like CSP also

provide a critical opportunity for residents to experience nature, which is increasingly recognized as vital to our health and well-being.

A ±29-acre red maple swamp (Bordering Vegetated Wetland, BVW), one of the largest remaining forested wetlands in Newton, occupies the central portion of CSP. There is an additional ±5 ac of BVW on site, to the east of the main wetland. Most of the proposed project is located within BVW and Bordering Land Subject to Flooding (BLSF). Portions of the work will occur within Buffer Zone and Riverfront Area associated with a ditched perennial stream that flows through CSP (Fig 2; See also, NOI Form 3, Attachment 2: Map of Wetland Resource Areas).



Amur Cork Tree Threat Assessment – Cork tree (*Phellodendron amurense*) is in the citrus family, Rutaceae. They were introduced to New England from the far east (Russia, Japan, Korea, Northern China) in the mid-19th century for ornamental uses and were planted in several gardens in the Boston area. Today, cork trees are known to be sporadically invasive throughout the Midwest and Northeast, and their invasive range appears to be expanding rapidly. The species is on the Massachusetts state list of prohibited plants and is classified as a tier 4 (highly invasive) plant in New York. In our region, cork tree poses a significant threat to both upland and wetland forests. In its native habitat, the tree prefers moist conditions, although a 2012 by Missouri Botanic Garden indicates that the species has invaded areas in the northeast with varied ecological conditions, including establishing in deep shade and in drier soils.

Cork tree seeds are bird dispersed and may also spread by water. In addition to propagation by seed, the species is a prolific producer of root suckers, which allows the

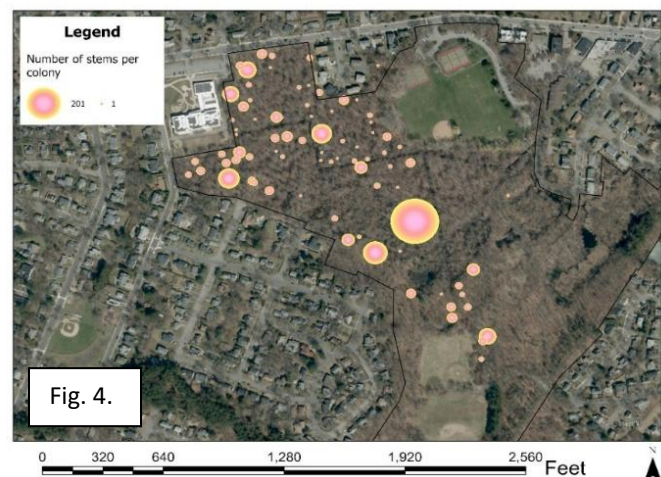


tree to spread fast and form extensive single species groves. Cork tree has allelopathic properties, meaning that it can suppress the germination and growth of native plants in its vicinity. In summary, cork tree can spread rapidly in both wetland and upland sites, become dominant and produce a densely shaded canopy, and suppress the growth of native shrubs, herbs, and seedlings on the forest floor.

In CSP, cork trees are most established within the red maple swamp and are beginning to invade portions of the upland. The threat that cork tree poses to the park's forests should not be underestimated. Red maple are typically the first trees to flower in our region and provide an important nectar resource for early spring insects and pollinators. For example, there is a large aggregation of early spring flying unequal cellophane bees that are known to forage red maple trees nesting in an old sandy field next to the red maple swamp. Early leaf out means that red maple is an important food source for resident and migrant insectivorous birds such as the American redstart. Many species of animals and plants occupying red maple swamp natural communities have coevolved for millennia, and significant alteration of the tree canopy and understory by cork tree is likely to have profound effects on forest ecology and native biodiversity. In the medium term, cork tree poses a threat to the upland forests of CSP as well, and without control, CSP can serve as a source for the further spread of this invasive species across the landscape.

Nevertheless, the cork tree invasion in CSP has not reached the tipping point. Although there are some larger specimens, most of the cork trees are still relatively small and they have not yet reached very high densities. Therefore, we have a unique opportunity to address this emerging threat before action becomes cost-prohibitive and demonstrate how a public-private partnership at the local level can successfully restore and maintain biodiversity and forest health for the benefit of this and future generations.

Cork tree mapping in CSP – As part of the development of a Natural Resource & Biodiversity Conservation Plan for CSP, transects were established throughout the red maple swamp and cork tree stands were mapped and described. A stem count was estimated for each stand and the presence of seedlings, saplings, and trees (>6" dbh) was noted. Although exact counts and measurements of larger trees were not obtained, most trees were of moderate size 6-12" dbh, with some larger specimens. Of the 83 cork tree locations mapped within the red maple swamp and extending somewhat into the buffer zone, 65% of the stands had ≤ 5 stems and 93% had ≤ 25 stems (Figs. 2 & 4). Although the formal mapping did not extend into the upland, informal assessment indicates that cork tree occurs at far lower density in these areas. We are currently completing a combination of removal of saplings from the remaining upland, coupled with the mapping of larger specimens for later removal (See implementation plan).



Implementation Plan and Benchmarks

The applicants have applied for a Biodiversity Conservation Grant from the Massachusetts Department of Fish and Game to implement this project. If the grant is awarded, a contract

between the granting agency to the city would be executed in February 2026 and all grant-funded activities would need to be completed by June 30. Although this implementation plan is designed to work within the timing constraints associated with this grant opportunity, the applicants would still seek to carry out a scaled back version of this proposed project over a longer time span if the grant is not awarded.

Because cork tree is well known to sprout from both cut stems and roots, it is essential to combine mechanical and chemical treatments to achieve successful control. Both triclopyr and glyphosate have been shown to be effective on cork tree, but treatments should generally be avoided during periods of peak spring sap flow (late February or early March through mid-May). Treatments during all other times of year (dormant and growing season) are effective, although treatments should be avoided during extreme cold. Applying small quantities of herbicide to recently cut stems (“cut and paint”) and squirting small amounts of herbicide into wounds to the tree trunk created by a chainsaw or hatchet (“hack and squirt”) are both proven, effective control methods that minimize the volume of required herbicide.

Our goal for the grant period is for 90-95% of the cork tree stems in CSP to receive a single cut and paint or hack and squirt treatment during appropriate seasonal treatment windows. This will effectively eliminate flowering cork tree from the park and severely reduce the prevalence of seedlings and saplings. That said, we are acutely aware that essentially *all* effective invasive control projects require a commitment to long-term monitoring and follow up spot control. Therefore, we have committed funds and in-kind pledges of follow up resources after the grant period and include detailed discussion of this in the implementation bullets that follow.

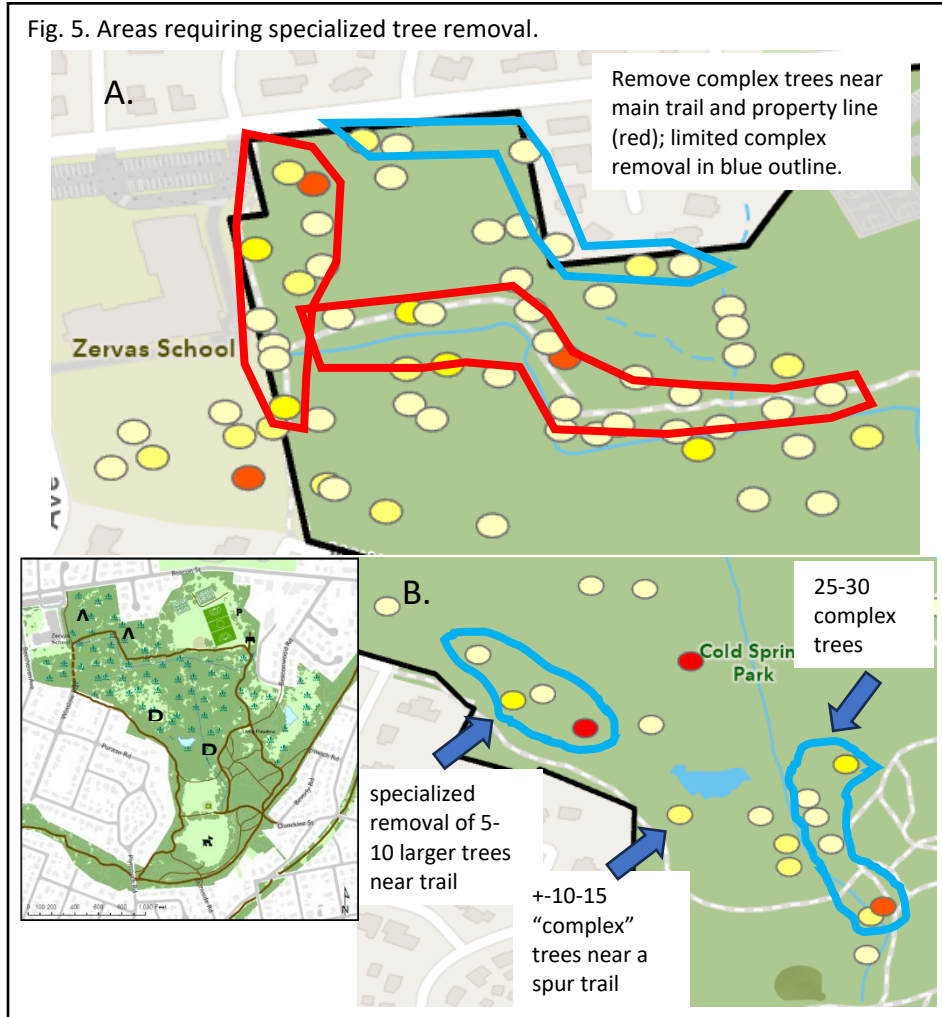
General Approach

- No heavy equipment will be used in the wetland and there will be no soil disturbance.
- All work will be completed with hand tools and chainsaws (but see details below).
- This project will not result in alteration of wetland resource areas, and will result in long and short-term improvements to wetland functions and values by:
 - Removing an invasive species that is significantly impairing wildlife habitat values and the integrity of the red maple swamp natural community, including altering the canopy and understory.
 - Conducting follow up monitoring and spot invasive plant control to prevent the re-establishment of cork tree and to promote the growth of native trees and shrubs in areas where cork trees have been removed.
- This project will not alter stormwater flowage or drainage, private water supply wells, or surface water withdrawals. There [are no active private water supply wells](#) in the vicinity of the proposed project site.
- We are seeking an order of conditions to carry out all the invasive plant control tasks described in this narrative, regardless of whether a Biodiversity Conservation Grant is awarded. Timelines may vary and deviate from the initial schedule described herein.

Initial Restoration

- *Away from trails and property lines* – The “hack and squirt” method will be used on all trees >±6” dbh that are located far enough away from public access trails and the park boundaries so as not to present a safety hazard. This approach creates snag habitat for wildlife, reduces cost, and reduces the potential to damage nearby red maple trees. Saplings (<±6” dbh) will be cut and painted with herbicide.

- *Near trails and property lines* – In areas where it is not safe to leave snags, all trees and saplings will be cut with chainsaws and then painted with herbicide (cut and paint). In some cases, limbing and other specialized techniques will be required so that cut trees do not get hung up in the canopy or pose a threat to adjacent structures. This may involve tree climbing, the use of a small, tracked bucket lift *limited to the main CSP loop trail*, and the use of lifts and other equipment in developed areas (i.e., the Zervas School parking lot) (Fig. 5).



- Most felled trees can be left where they fall. However, in areas near trails and at larger cork tree colonies, some creation of wood piles will be necessary. These brush piles create wildlife habitat and avoid the need to bring heavy equipment into the wetland. No woody debris from the project will enter or be placed in perennial streams.
- Most work is expected to be completed during the full leaf out period (late May-June). However, some work may occur in mid to late-February (depending on grant outcome and timing). In the areas with more complicated tree work (larger cork trees, increased risk of "hangers"), to accommodate contractor scheduling and ensure that all initial treatments are completed by June 30, we may need to complete some initial mechanical treatments in winter and spring, recognizing that stems and trunks will need to be recut to apply herbicide after the spring sap run.

- All work is expected to be carried out by qualified contractors selected and overseen by the City of Newton Urban Forestry Division. However, some hack and squirt and cut and paint treatments may be carried out by licensed herbicide applicators provided by Newton Conservators and Friends of Cold Spring Park. The applicants are committed to providing adequate field oversight of contractors during the work period.
- The site will be carefully inspected in June after work is completed to ensure that work was completed in accordance with the project scope. For efficiency, the inspection will be combined with “mop up,” where seedlings/saplings that have been missed will be removed and treated. Any larger trees that were missed will be marked and mapped for removal.
- A final report will be prepared describing how grant funds were spent (if applicable), and the results of the project as documented during implementation and the post-work inspection.
- Replanting of native seedlings is not expected, because most cork tree occurrences consist of small numbers at relatively low density. However, we are reserving some funds in case replanting is needed at sites where larger cork tree colonies were located, after two years of monitoring and follow up invasives control (see below).
- If the grant is awarded, the Conservators and FCSP are committing \$15,000 in cash match to defray costs of the treatments to be completed by June 30, 2026. They are committing an additional \$12,500 (cash) and 200 volunteer hours (including at least 100 hours by Licensed Pesticide Applicators) to post-June 30 follow up (see below).

Post-June 30 Follow-up – With detailed mapping and project planning, this project has been designed to achieve a high level of control during the initial treatment round. Nevertheless, the applicants are committed to multi-year follow up to eliminate stump and root sprouting that occurs despite the initial herbicide treatments, cork tree that germinates after project completion, and small numbers of individuals that may have been missed during the initial treatment. After work is completed in 2026, and during the following two calendar years, volunteers will walk transects through the site, remove and treat small to medium cork trees, and if necessary, mark larger individuals for later removal, either by a contractor, or by the city tree crew. This volunteer effort will also include control of understory invasives, particularly at sites where larger cork tree colonies were removed, to promote revegetation of native plants, including red maple.

Outreach, Education, and Community Engagement – A key element of this project is ensuring high quality opportunities in an urban environment for people to *connect* with nature near their homes, participate directly in hands-on volunteer work, and better understand the importance of ecological restoration. The project will make extensive use of existing channels used by Newton Conservators and Friends of Cold Spring Park. Newton Conservators conducts year-round educational and recreational guided walks, runs a webinar series, publishes a quarterly newsletter and weekly e-bulletin to an 1800-person mailing list, and maintains an informative website. The Friends email regularly to a 470-person list, have made webinar and in-person public presentations, conducts park tours, and annually canvasses neighborhoods around the park, and maintains a web site and Facebook page. They installed and maintain a kiosk with a map, event listings, announcements, invasive plant information, and rotating “What’s in Bloom” posters.

The Conservators and FCSP intend to implement the following outreach and community engagement actions as part of this project, before, during, and after implementation:

- Send special e-mails about the project to membership distribution lists and post on social media
- include articles in their newsletters

- create a kiosk flyer
- present a webinar
- Establish project pages on their websites.
- Reach out to the principal and PTO of the adjacent Zervas Elementary School to help educate students about the project and develop programming.
- Write a press release for local media
- Erect an interpretative sign at a trailside site with one of the largest proposed cork tree removals
- feature the project on park tours and guided nature walks
- recruit volunteers from the community and conducting sessions to help with follow-up monitoring and invasive plant removals.

Project Timeline (subject to change; see narrative)

Timing	Activity	Notes
Jan – Nov 2025	Cork tree mapping and plan development	
Dec 2025	Pre-filing consultation with Newton Conservation Commission	See letter of support attachment
Dec '25 – Jan '26	Remove cork tree saplings from upland and map larger upland cork trees for later removal	40 hours of contract work paid for by Conservators and FCSP
Feb 2026	Obtain final Conservation Commission Approval	NOI will be submitted by January 13 for approval at Jan 29 meeting
Feb 2026	Begin mechanical and chemical treatments if grant is awarded and contract is executed (or limited “in-house”)	Before spring sap flow. This work can all be completed after leaf out if necessary.
Feb – June 2026	Remove complex large trees near major trails and property boundaries	Follow up chemical treatments after leaf out as needed.
Feb – Mar 2026	<ul style="list-style-type: none"> • Press release • First e-newsletter communications • Install kiosk and work area interpretive signage • Add project pages to websites • Outreach to Zervas School 	Exact timing TBD, based on timing of contract execution; the presence of some large cork trees near the school presents an outstanding opportunity to engage the school community.
May -Jun 2026	<ul style="list-style-type: none"> • Complete all remaining mechanical & chemical treatments after leaf out • Host guided nature walk featuring the project • Host Conservators project webinar • Recruit volunteers 	
Jun 2026	<ul style="list-style-type: none"> • Complete thorough site inspection to ensure that work has been completed in accordance with specifications • Complete first round of follow-up treatments, as needed • Deploy volunteers • Begin preparing initial treatment final report 	
Aug – Dec 2026	<ul style="list-style-type: none"> • Complete 2nd round of follow up monitoring and spot treatments • Provide community email updates and publish article in Conservators newsletter 	In addition to controlling cork tree seedlings and sprouts, follow up treatments will target other invasive woody plants that may colonize the work areas.

2027 -2028	<ul style="list-style-type: none"> • Continue formal follow-up monitoring and spot treatments • Plant native shrubs and red maple whips as needed 	Some limited replanting may be warranted in areas where larger cork tree colonies were present
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Project Team

This project demonstrates how a large-scale restoration can be completed through local partnership. As described above, this includes completing the initial restoration and committing to long term maintenance to ensure long-term success.

Marc Welch is the Deputy Commissioner of the Newton Parks, Recreation, and Culture Department. He has led the City’s Urban Forestry division for nearly 24 years. Marc has a bachelor’s degree in Urban Forestry from the University of Massachusetts and has worked in community forestry and public land care for 30 years. He is a Massachusetts Certified Arborist and Massachusetts Qualified Tree Warden. *Marc will serve as the overall project lead.*

Katherine Howard is President of Newton Conservators, after being its treasurer for 25+ years. She has coordinated its volunteer invasives team for almost as many years, working in many city parks and conservation areas as approved by the city. In recent years she has become a licensed herbicide applicator to make the invasives management efforts more effective. She is retired from a career in health care financial management.

Alan Noguee is Founder and President of the Friends and recently joined the Newton Conservators Board. He retired after a 35-year career as an energy analyst and advocate, with 15 years as the Clean Energy Program Director of the Union of Concerned Scientists, followed by a consultancy.

Katherine and Alan will lead outreach and communications efforts and volunteer coordination. Katherine and one or more other volunteers who are licensed herbicide applicators will provide over 100 hours of herbicide services during both the initial treatment and long-term maintenance phases of the project.

Jon Regosin is on the Newton Conservators Board of Directors and supervised development of the Draft Natural Resource & Biodiversity Management Plan for the city and Friends of Cold Spring Park. He is the former Deputy Director of the MA Division of Fisheries and Wildlife. *Jon is providing technical assistance for this project, including helping to file the wetlands NOI.*

Newton Conservators, Inc is an all-volunteer 501c3 nonprofit founded in 1961 with a mission to “connect people with nature.” It advocates for and protects open spaces and promotes their ecological health. Newton Conservators is Newton’s land trust, holding and monitoring Conservation Restrictions on city-owned and private parcels. It also functions as an informal umbrella organization, sponsoring start-up friends groups for local parks, including Cold Spring Park. Newton Conservators conducts year-round education and outreach activities, publishes a popular [Trail Guide](#) and almanac-style [nature guide](#), coordinates invasive management volunteers, including a licensed herbicide applicator with appropriate insurance and permissions, working in many of the city’s open spaces. Its events are free and are publicized in the local news outlets, mayor’s newsletter, NextDoor, and social media. The Conservators’ DEIJ committee works to reach a broader community along economic, age, racial, and ethnic lines. It is partnering with the local Indigenous People’s Day organizer to plan a guided walk in one of Newton’s largest forests, in May 2026.

The Friends of Cold Spring Park, Inc is an all-volunteer 501c3 nonprofit founded in 2018 to protect and improve accessibility and biodiversity in Newton's largest multi-use park. The Friends have raised money to renovate stone dust trails, and in collaboration with the Parks & Recreation Department and Boy Scouts of America, have added wetland duckboards, installed a kiosk, box stairs, wayfinding posts, and created a 650 square foot fenced pollinator garden with free Little Seed Library to support at-risk bees and butterflies. The Friends have been honored by awards from the Conservators and Green Newton, the city's largest environmental group.

The Friends and Newton Conservators volunteers combined to conduct eight invasive management sessions in CSP this year, focused on maintaining and expanding the largest relatively uninvaded woodland and wetland natural plant communities. They have planted native trees, shrubs, and forbs in three other areas following invasive plant removals. In collaboration with the Native Fish Coalition, they have found golden shiners and American eels and explored and documented brook habitat conditions.

Appendix 1. Proof of publication of notice in the Environmental Monitor (published January 9, 2026)

<https://eeaonline.eea.state.ma.us/EEA/MEPA-eMonitor/home#PublicationDate>

<https://eeaonline.eea.state.ma.us/e831ab8e-5a71-427e-acec-51ef6014cd24>