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New York State Hemlock Initiative 2025 ANNUAL REPORT



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Mission

The mission of the New York State Hemlock Initiative (NYSHI) is to coordinate state-wide efforts of landowners, state and federal agencies, government officials, and concerned citizens to conserve New York State’s hemlock trees. Our research focuses on the management of hemlock woolly adelgid (HWA), a non-native invasive insect, including development of biocontrol options. Additionally, our work involves public outreach to engage stakeholders and increase awareness of the threats posed by HWA and other invasive forest pests.

Executive Summary

In 2025, the New York State Hemlock Initiative advanced statewide hemlock conservation through a year of exceptional rearing of predators for biological control, expanded research capacity, and strengthened regional partnerships. This year marked several major milestones, most notably the first confirmed establishment of the silver fly *Leucotaraxis argenticollis* in New York State, detected at a site in Bath, NY. This achievement follows many years of research, rearing, and monitoring, and represents a significant breakthrough in establishing a complementary suite of biological control agents for long-term HWA management.

Across the 2025 season, NYSHI collected more than 600 pounds of western hemlock foliage to support predator rearing, stocked 135 rearing cages, and produced over 30,000 predatory insects, including the beetle *Laricobius nigrinus* and both silver fly species, *Le. argenticollis* and *Le. piniperda*. These efforts enabled a record-setting season of releases and redistributions. A historic three-day collection at Harriman State Park yielded 12,676 wild *Laricobius* beetles which were then re-released to support biocontrol across the landscape.

Research programs made substantial progress this year. Experiments examining diapause strategy, oviposition preference, predator eDNA detection, reciprocal infestation dynamics, and HWA winter mortality advanced significantly. We also made progress on new methodologies, including rainwater-based eDNA sampling and improved beetle storage protocols. Monitoring efforts confirmed widespread *Laricobius* dispersal across New York and refined approaches to predator detection, including new work comparing foliage-based, snow-based, and rainwater-based eDNA sampling.

Two peer-reviewed manuscripts were accepted for publication, representing major milestones for the program. One paper, accepted in the *Journal of Insect Science*, documents NYSHI's composite methods for collecting and rearing three sympatric biological control agents of hemlock woolly adelgid, providing a standardized foundation for predator rearing and research. A second paper, accepted in *Biological Invasions*, examines multi-trophic interactions and niche partitioning by predators in HWA's native range, offering new insights to inform biological control strategies in invaded forests. PDF versions of both papers are available on our website: [Whitmore Lab Journal Articles – New York State Hemlock Initiative \(cornell.edu\)](https://www.whitmorelab.org/journal-articles).

The Hemlock Conservation Team continued to play a critical role, surveying 7,778 acres and treating 2,126 trees in high-priority hemlock stands in the Adirondacks and Lake George basin. Crews overcame longstanding logistical challenges by completing basal bark treatments on multiple island and shoreline sites, strengthening protection of some of the region's most ecologically valuable hemlock stands. Collaboration with the Lake George Hemlock Coalition, DEC, OPRHP, PRISMs, and land trusts supported coordinated regional management throughout the year.

Public engagement remained central to NYSHI's mission. Staff delivered more than two dozen talks, trainings, and demonstrations, engaged hundreds of visitors at Cornell's Insectapalooza, and reached thousands of individuals through digital platforms and media coverage.

Collectively, the accomplishments of 2025 reflect a program growing in capacity, scientific depth, and regional impact. With the first confirmed establishment of *Leucotaraxis argenticollis* in the state, record

Laricobius production, widespread dispersal from established populations, *Laricobius* redistribution from collections at established sites, and in addition expanding partnerships across agencies and communities, NYSHI is building a durable foundation for the long-term protection of New York’s hemlock forests.

Section I: Research Projects

Foliage collections from HWA-infested hemlocks in the western United States continue to supply the predators that support NYSHI’s biocontrol research and release efforts. Predator collections were especially successful this year, reflecting both the significant effort devoted to locating source populations in the Pacific Northwest and the discovery of several productive collection sites. This work depends on coordinated travel, rapid cross-country shipping, our quarantine facility and USDA APHIS permitting, strong institutional support, and the dedication of NYSHI staff.

2025 collection season by-the-numbers

- **24,145** *Leucotaraxis* spp. collected: **11,290** *Le. piniperda* and **12,855** *Le. argenticollis*. Collection began on 19 February when the first adult emerged and ended on 23 June with final collection.
- **135** hemlock cages filled with foliage collected from 33 sites in California, Oregon, and Washington state between 19 February and 19 May.
- **4** collection periods with 2-3 shipments each, **620** pounds of foliage shipped to the quarantine facility.
- **195** *Laricobius nigrinus* adults collected from the foliage cages.
- **10,370** *Laricobius nigrinus* prepupae collected.
- **84** containers full of soil media for *Laricobius nigrinus* pupation and aestivation.
- **7,230** *Laricobius nigrinus* adults collected from pupation containers between 31 August and 3 December
- **69.7%** survival rate of beetles over the summer, which is consistent with our last three years.
- **13,877** *La. nigrinus* beetles released at 8 sites. Releases included **5,984** lab-reared beetles and **7,371** field-collected beetles.

Five-year retrospective rearing summary.

Year	Number of Sites	Number of Cages	Collected <i>Leucotaraxis</i> flies	Flies per cage	Spring beetle adults	Beetle prepupae	Fall beetle adults	Beetle rearing % survival
2019	28	173	10,345	59.8	122	4,818	1,179	24.47%
2020	29	179	10,095	56.4	468	9,677	3,899	40.29%
2021	27	268	13,228	49.4	298	26,210	10,852	41.40%

2022	34	232	12,382	53.4	941	25,277	12,614	49.90%
2023	22	170	20,577	121.0	496	17,726	12,064	68.06%
2024	22	135	48,655	360.4	559	15,558	10,936	70.28%
2025	33	144	24,145	178.9	195	10,370	7,230	69.70%

Biological Control: *Laricobius* spp. Rearing and Release

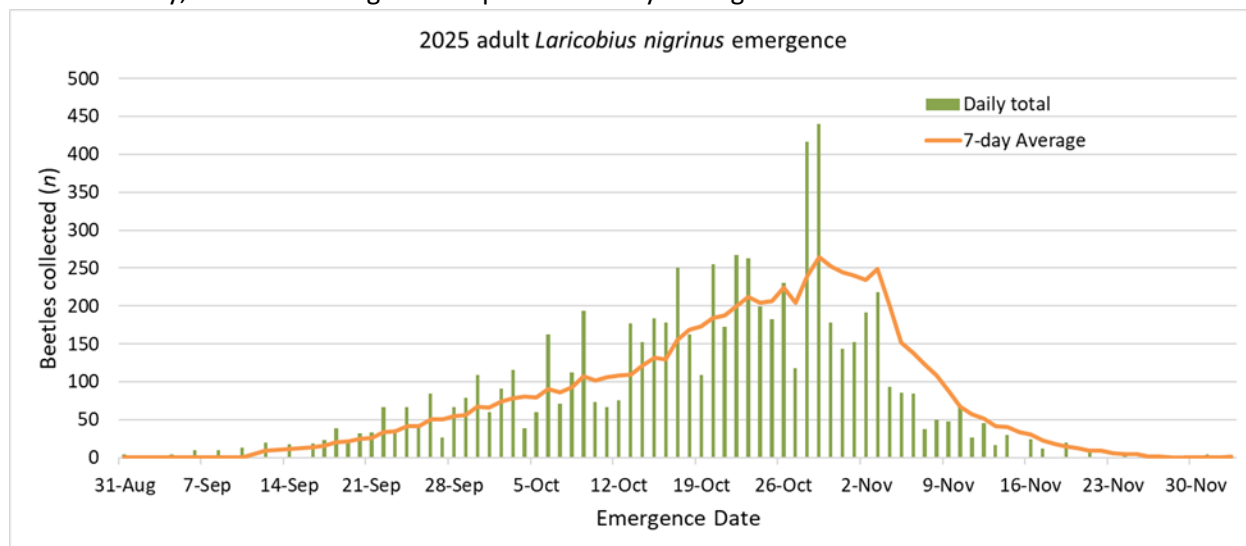
This year, we collected our first emerged adult on August 31, and the final collection occurred on 3 December. Out of 10,370 prepupae housed in 84 soil tubs, 7,230 successfully emerged, representing a 69.7% survival rate. This is the third year in a row where we have attained high survival, a consistency that validates our rearing technique.

Building on these rearing results, we developed a fall release plan and secured the necessary permissions and partnerships to support *Laricobius* spp. releases. In collaboration with the Department of Environmental Conservation, we evaluated priority release sites and worked with local land managers to provide training for biological control efforts using lab-reared *Laricobius*.



La. nigrinus feeding on HWA. Photo taken by Sophie Nasrallah using a Leica microscope.

Daily collection numbers of adult *Laricobius nigrinus*. The green bars represent total *La. nigrinus* collected daily, while the orange line depicts the 7-day average.



New York State Fall 2025 *Laricobius* spp. Releases: Fall 2025 *Laricobius nigrinus* and *Laricobius osakensis* releases targeted the leading edge of HWA spread as well as underserved areas to establish populations of predators. Newly identified infestations at Lake Champlain and Great Sacandaga Lake were prioritized, including a release of over 2,000 beetles at a Lake Champlain property which is a leading edge and the northern-most infestation in the state. Across the season, a total of 5,984 *La. nigrinus* were released from western North America collection and rearing, 7,372 from state redistribution, and 522 *La. osakensis* from the Virginia Tech rearing facility (See Release Table below).

Redistribution efforts were a highlight of the season, with four separate events occurring across New York. At Glenora Glen along Seneca Lake, nearly 600 beetles were collected in just a few hours and released at Snake Hill, Saratoga Co. The largest redistribution event in New York history took place at Harriman State Park, where over 12,000 beetles were collected in three days. 6,847 of the beetles were subsequently released at Five Rivers Environmental Education Area in Albany County, Thacher State Park in Albany County, and Long Point State Park in Cayuga County.



Harriman State Park field collection crew.

The Harriman collection was further strengthened by collaboration with Vermont and New Hampshire. Partners joined for the first two days of collection and a third day with NYSHI, resulting in 4,392 beetles released at two sites in New Hampshire and 1,437 beetles released at one site in Vermont. In 2013, New York State benefited from a similar collection effort in North Carolina. This successful multistate partnership demonstrates the value of regional coordination and contributes to the development of a nationwide biocontrol network.

The establishment of this bountiful site for predator collection and redistribution is the culmination of work that began with evaluations in 2017 and the first release in 2018, and it is a testament to the potential benefits of sustained release efforts over time. This effort, conducted in collaboration with NYS OPRHP and NYS DEC, underscores Harriman’s potential for future redistribution efforts.

Releases of *Laricobius* spp. in Fall 2025: Under “Spp.”, “Ln” designates releases of *Laricobius nigrinus*, and “Lo” designates releases of *Laricobius osakensis*.

Release Date	Quantity	Spp.	Release Site	Manager/PRISM
10/9/2025	1,114	Ln	Lake Champlain	Private Property
10/16/2025	522	Lo*	McCarthy Hill SF	NYS DEC, R8
10/28/2025	569	Ln**	Snake Hill	Saratoga Plan
10/29/2025	2,060	Ln	Green Lakes SP	NYS OPRHP
11/4/2025	1,054	Ln	Lake Champlain	Private Property

11/6/2025	1,686	Ln**	Five Rivers Environmental Education Area	NYS DEC, R4
11/6/2025	2,646	Ln**	Thacher SP	NYS OPHRP
11/7/2025	2,470	Ln**	Long Point SP	NYS OPHRP
11/19/2025	1,756	Ln	Great Sacandaga Lake	NY Government Lands
Total	13,877			

*Lo beetles sourced from collaborators at Virginia Tech

**Adult beetles were wild collected in New York State and redistributed

Biological Control: *Leucotaraxis* spp. (silver fly) Release

Collection: We maintained effective and efficient collection strategies we developed in 2022: identifying flies to species as they emerge and storing them in separate holding jars to ensure single-species collection and releases. We continue the practice of tracking daily species (*Leucotaraxis* and *Laricobius*) emergence data by collection site to inform future collections and anticipate changes in emergence trends.

Comparison of *Leucotaraxis* species numbers collected over the last three years.

Year	<i>Le. piniperda</i>	<i>Le. argenticollis</i>
2022	9,559	2,809
2023	17,358	3,130
2024	44,638	3,744
2025	11,290	12,855

***Leucotaraxis* spp. releases:** In 2025, NYSHI piloted a new *Leucotaraxis* spp. release strategy, focusing releases at two sites to increase the likelihood of establishment. Working with NYS DEC and NYS OPRHP, sites were selected using 2025 HWA winter mortality results: *Le. argenticollis* were released at Sugar Hill State Forest and *Le. piniperda* were released at Robert Treman State Park (see table below).

This approach marks a shift from previous years, when smaller releases were distributed across many locations. By concentrating releases, we aim to overcome potential challenges of predator establishment, including phenological mismatch and potential Allee effect, an ecological phenomenon where low population densities lead to reduced individual fitness and



Leucotaraxis spp. release at Robert Treman State Park, Tompkins County, May 2025.

suppressed population growth. Follow-up surveys will be conducted in future years to evaluate success. Although we released fewer flies than last year, this was one of our most productive seasons for *Le. argenticollis*. With this new inundative release approach, we are hopeful that we will see establishment at these sites more rapidly than at sites with smaller, inoculative releases.

2025 *Leucotaraxis* spp. releases. Adult flies were released unconfined into selected HWA-infested hemlock groves.

Site and species	Date	Number of flies released
Robert Treman State Park, <i>Le. piniperda</i>		
	4/17/2025	1,899
	4/24/2025	838
	5/2/2025	2,741
	5/15/2025	2,258
	5/23/2025	253
	6/4/2025	950
Total <i>Le. piniperda</i>		8,939
Sugar Hill State Forest, <i>Le. argenticollis</i>		
	4/3/2025	282
	4/16/2025	34
	4/23/2025	113
	4/30/2025	90
	5/6/2025	83
	5/16/2025	1,327
	5/27/2025	377
	6/4/2025	4,244
	6/12/2025	3,413
Total <i>Le. argenticollis</i>		9,963
Total flies released		18,902

Biological Control: Monitoring

Monitoring is seeking the predator species released for classical biocontrol, usually near release sites at first, then expanding to other places as populations spread. There are many methods and strategies for monitoring. Across eastern North America, managers and researchers are actively looking for predators released for biocontrol of HWA using standardized methods that we helped to develop. These approaches include both traditional field techniques, such as sticky traps, and newer molecular tools, such as environmental DNA (eDNA).

***Laricobius* trapping and dispersal research:** Research assessing *La. nigrinus* dispersal in NYS and sticky trap efficacy as a tool for detecting *La. nigrinus* was completed in April/May 2025. Sites surrounding known established populations at three distance intervals (1-8 km, 8-16 km, and 16-24 km) were surveyed for the presence of *Laricobius* using yellow prism traps and larval sampling by collecting foliage. Sampling occurred at 54 locations across NY, with sites in the Lower Hudson Valley, Catskills, and Finger Lakes regions. NYSHI staff worked with collaborators, private landowners, and land managers to deploy traps and collect foliage samples for lab monitoring.



NYSHI team deploys yellow sticky traps across New York State for monitoring.

This research included placement of yellow prism traps at each survey site and collection of HWA infested foliage for lab observation using Lari-Leuco containers. *Laricobius spp.* are the focus of this work, but all containers were also monitored for *Leucotaraxis spp.* Additionally, field color choice assays were completed at two locations in NY, adding to the assay sample size from fall. This work was supported through collaboration with NYS OPRHP, NYS DEC, NYC DEP, US Army, Mianus River Gorge, and multiple private landowners.

We confirmed that yellow prism traps are the most effective color for catching *La. nigrinus* adults in the field. Suspected *La. nigrinus* adults or larvae were collected from 41 of 54 sites across NY, with evidence of dispersal from each population surveyed across all regions. Dispersed populations were detected on both private and public lands. Preliminary analysis indicates that yellow prism traps are an effective tool for beetle surveys.

Detection table: The number of positive *La. nigrinus* detections by either prism trap (adults) or Lari-Leuco container (larvae), at survey sites moving away from known established populations. Established populations resulted from inoculative releases, while survey sites within the three buffer zones have no release history. Each established population was surveyed using two sites within each distance interval, resulting in six survey sites per population and 54 total sites across the state. *Totals are subject to change pending genetic identifications.

Established Population	County	1-8 km	8-16 km	16-24 km	Total established
Minnewaska	Ulster	2	2	0	4
Fahnestock	Putnam	2	2	2	6

Harriman	Orange	1	2	2	5
Mianus River Gorge	Westchester	2	1	1	4
Edwards Cliffs	Tompkins	2	2	2	6
Glenora Glen	Yates	2	2	2	6
High Tor	Yates	1	1	2	4
Neversink	Ulster	2	1	1	4
Beaver Kill	Ulster	0	0	2	2
Total		14	13	14	41*

Early Detection of HWA Using Landscape-Scale eDNA: NYSHI continued its multi-year effort to evaluate environmental DNA (eDNA) as an early detection tool for HWA at the edge of its expanding range. Throughout 2025, staff refined workflows for processing three seasons of field samples and merged these data with extensive visual survey records from iMap Invasives. The goal is occupancy modeling to better understand detection probabilities and the spatial relationship between eDNA signals and visually confirmed infestations. When completed, this project will be NYSHI’s most comprehensive and informative eDNA research effort.

Detection of eDNA in rainwater: In 2024, we conducted a pilot study using tarp-based rainwater samplers to develop effective methods for detecting eDNA by sampling rainwater. While this sampler did collect water that tested positive for HWA, the design was limited as it required being tied to multiple hemlock trees. In 2025, we continued the work of developing more precise methodology for rainwater sampling. We tested a new sampler design attached to a mobile PVC-pipe frame. This frame allowed us the freedom to place the samplers anywhere in the forest. This design also collected water that tested positive for HWA, though we were unable to detect any predator eDNA. Future refinement of rainwater methodology may include increasing the sample size of rain samples collected and varying the way the samplers are deployed in the field to try to detect predator eDNA.

Detection of eDNA using snow: NYSHI researchers are exploring whether eDNA tools can expand and improve how we detect hemlock woolly adelgid and its biological control agents in the field. As part of this effort, we initiated a pilot study to test whether snow could serve as a reliable sampling medium for detecting HWA DNA in forested environments. Technicians in Ithaca and in Lake George sampled two field sites in February and March. At each site, 9 trees were selected and for each tree, three samples were taken in relation to the tree’s base, dripline, and 2.5 m out from the. Two sites, nine trees per site, and three samples per tree generated 54 unique samples, plus controls.

At Buck Mountain in the Adirondacks, no HWA eDNA was detected in any snow samples. The trees sampled were evaluated as uninfested or mildly infested and were in a general area that received chemical treatment in Fall 2024 or earlier. At Ringwood Ponds Natural Area (ownership: Cornell Botanic Gardens) we had nine detections of eDNA. Trees at Ringwood have never been chemically treated and the infestations ranged from mild to heavy. These results suggest that snow sampling may not be an effective method for early detection of HWA, as it was unable to detect HWA at Buck Mountain. Alternatively, eDNA may be reduced at Buck Mountain due to chemical treatments. The sample size is too small to draw any conclusions, and it remains to be seen whether snow could harbor predator DNA

for establishment monitoring. Finding HWA eDNA is a proof-of-concept, although quantities of predator eDNA are likely to be much lower compared to HWA.

Biological Control: *Laricobius* spp.

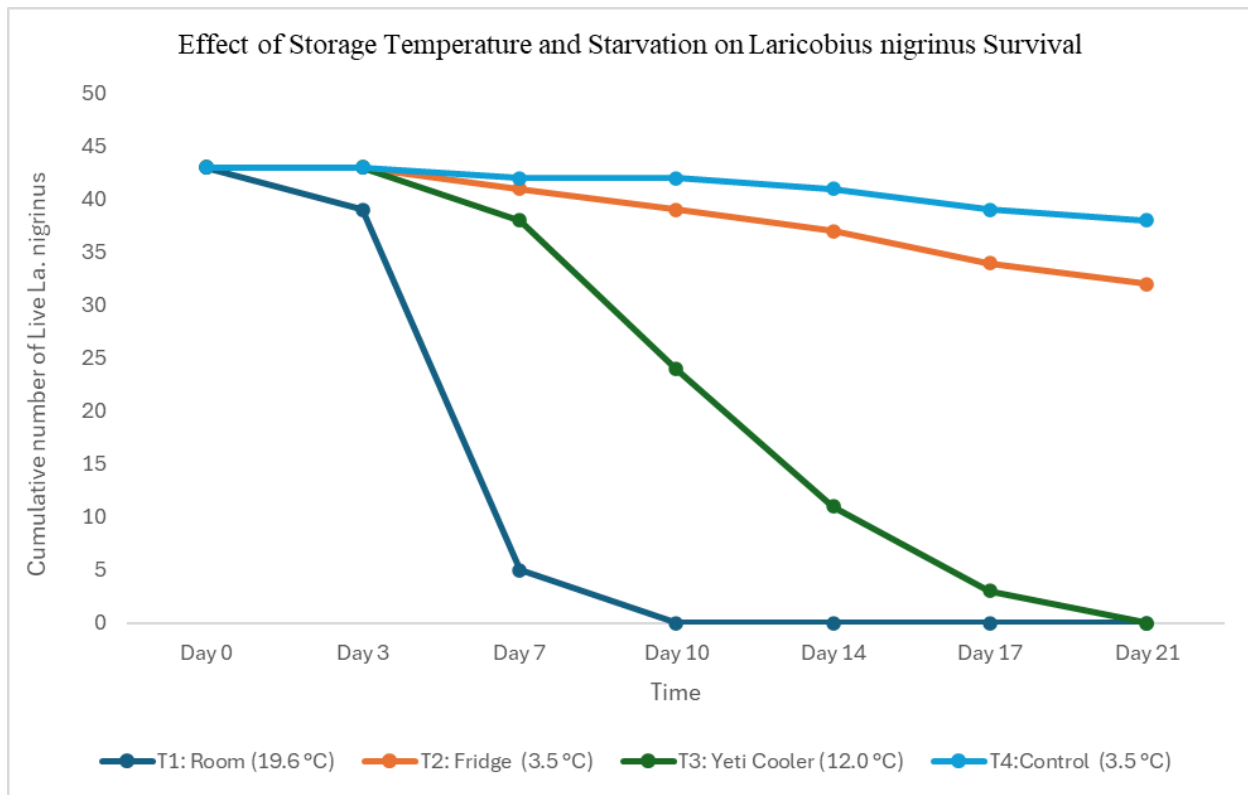
***Laricobius nigrinus* storage experiment:** *Laricobius nigrinus*, a specialist predator for classical biological control, has become established throughout New York State. This expansion creates new opportunities for wild collection and redistribution, but it also raises a practical challenge: beetles often need to be transported long distances or held temporarily in the field, sometimes under less-than-ideal conditions. Understanding how short-term storage affects survival is essential for making these redistribution efforts efficient and effective.

To address this, we tested how different temperature conditions influence beetle survival when food is limited—an unavoidable reality during transport. A total of 172 adult *La. nigrinus* beetles were distributed evenly among four treatment groups representing potential storage methods. The control represented standard long-term laboratory storage conditions, where beetles are kept refrigerated with food. The YETI cooler represented field or transport storage conditions, with ice replaced daily.

Study design for beetle storage experiment.

Treatment Type	Food Available	Average Temperature (°C)
Room Temperature	NO	19.6
Refrigerator	NO	3.5
YETI Cooler	NO	12.0
Control	YES	3.5

During three weeks of monitoring, survival remained similar across treatments during the first three days, after which survival diverged among temperature regimes (see chart below). Beetles held at room temperature died rapidly, with no individuals surviving beyond 10 days. Beetles stored in the YETI cooler experienced slower mortality but did not survive to the end of the experiment, whereas beetles held at consistently cooler temperatures survived longer.



Overall, results indicate that low temperature storage is essential to prolong *La. nigrinus* survival in the absence of prey. Field storage in a cooler with regularly replaced ice appears sufficient for up to three days before survival declines, providing practical guidance for future redistribution and release efforts.

***Laricobius* survival experiment:** NYSHI’s adult *Laricobius nigrinus* survival rate has been consistently high for the past 4 years; hovering around 70% survival of prepupae to adult. Analyses of our survival rate demonstrate that it is consistently higher than other labs doing continual colony rearing where they feed eastern HWA to larvae, or include eastern *L. nigrinus* larval bycatch in rearing. Moreover, we don’t know how this survival rate compares to the beetle populations that have established on the invasive eastern HWA. Understanding the relationship between HWA lineage, beetle origin, and survival is critical to improving rearing protocols and *La. nigrinus* efficacy in the east. To explore *La. nigrinus* survival we conducted an experiment in 2025 during our predator acquisition season. We hypothesize that our **composite rearing** method (D’Auria et al. 2025) enables the larvae to spend more time feeding on their native prey in their natural habitat thus improving survival. To test we chose four sites in Washington State and three sites in New York State with abundant *La. nigrinus* populations. HWA-infested branches were collected from these sites, following western predator collection protocols, and were brought to the SARL biocontainment greenhouse where prepupae (fourth instar larvae) were collected daily and kept as pupae in the lab. In the fall we collected the adults that emerged from the soil. Our experiment resulted in 2,528 collected prepupae and 1,733 emerged adults. **Preliminary analyses indicate that there was no significant difference in survival rates of beetles between the west and east coast.** These results indicate that *La. nigrinus* can survive just as well in the introduced eastern range as in their native western range, providing additional support for this species as a biocontrol

agent. Additionally, as wild eastern *La. nigrinus* collection and redistribution efforts increase, differences in larval prey source and feeding environment will have little impact on survival to adult.

Survival Table: Prepupae and adult collection from *La. nigrinus* populations in New York (NY) and Washington (WA). Vouchers are preserved for hybridization assessment.

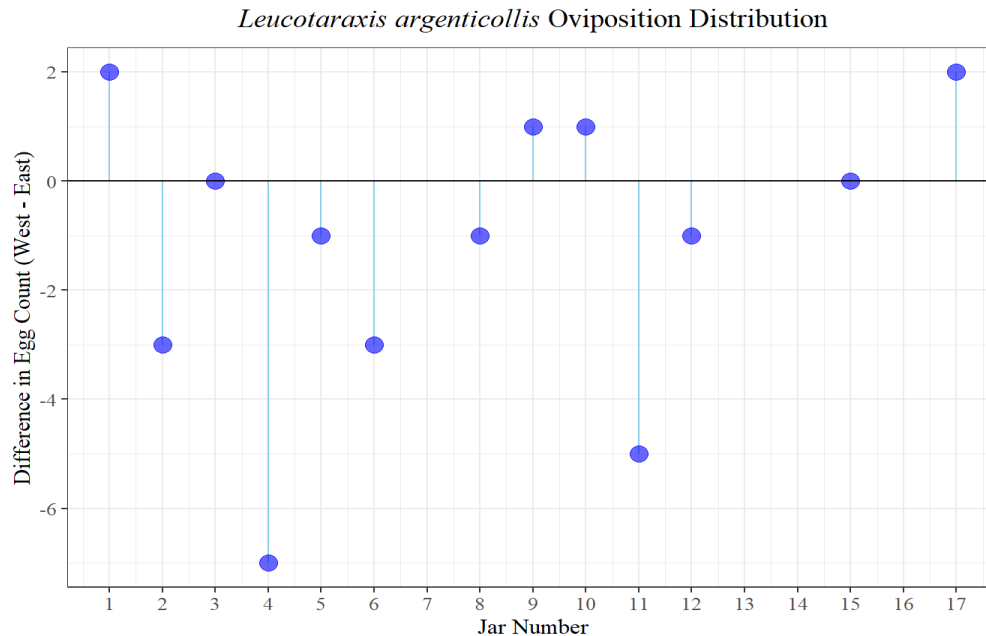
HWA	Site	Prepupae collected	Prepupae Vouchered	Aestivated	Emerged	Proportion emerged	Adult vouchered
E	Glenora	488	25	463	315	0.68	43
E	Harriman SP	243	19	224	170	0.76	36
E	Minnewaska SP	158	16	142	108	0.76	30
W	Possession Point	242	15	227	148	0.65	41
W	South Whidbey SP	141	11	130	92	0.71	37
W	Woburn	1047	30	1017	789	0.78	79
W	Crystal Springs	209	15	194	111	0.57	27

Biological Control: *Leucotaraxis* spp. (silver flies) Research

We are engaged in a broad scope of research to inform HWA biocontrol development through understanding life history strategies, ecology, and physical tolerances of both fly species.

Oviposition preference experiment results: To better understand the oviposition preferences of *Leucotaraxis* species, we conducted a small pilot experiment in quarantine using western HWA. Flies were offered a choice between eastern and western hemlock foliage. Each species was tested individually in containers containing two small twigs: one from an eastern hemlock infested with the Japanese HWA lineage, and one from a western hemlock infested with the western HWA lineage. Twigs were paired to be of similar size and infestation level. After the oviposition period, all flies and twigs were frozen for later inspection. In total, 17 mated females of *Le. argenticollis* and 19 of *Le. piniperda* were used.

Each twig was examined under a dissecting microscope to record the number of HWA ovisacs, and *Leucotaraxis* eggs. Of the two species tested, only *Le. argenticollis* laid enough eggs to allow for statistical analysis of oviposition preference. Results indicated that *Le. argenticollis* showed no significant oviposition preference between eastern and western HWA lineages. Additionally, factors such as prey density, age of individual flies, and availability of oviposition sites (prey ovisacs) had no significant effect on oviposition behavior. We might have expected both *Leucotaraxis* species to exhibit an intrinsic preference for the western HWA lineage with which they coevolved, but no such pattern was observed. The lack of oviposition preference in *Le. argenticollis* supports its potential as an effective biological control agent for HWA in North America.



Oviposition preferences of *Leucotaraxis argenticollis* (n = 13) when offered a choice between HWA-infested western and eastern hemlock foliage. Positive values indicate a preference for western foliage, negative values indicate a preference for eastern foliage, and zeros indicate equal egg deposition on both foliage types. Four of 17 flies laid no eggs.

Detection of eDNA on eastern foliage: Determining whether the predators we release for biological control are establishing successfully is essential to optimize our release strategies and understand their long-term impact. While we've confirmed that *Laricobius* beetles are persisting through recapture in the years following release, *Leucotaraxis* flies have proven much more elusive. To address this uncertainty, we launched both a field study and a laboratory experiment to test whether environmental DNA (eDNA) can provide a sensitive and rapid method to detect western fly presence on eastern hemlock foliage.

The field project aimed to detect *Le. argenticollis* and *Le. piniperda* eDNA on hemlock branches after flies were recently released. Eight foliage samples from eight different trees were collected from Sugar Hill State Forest on 6/12/25, eight days after the last *Le. argenticollis* release, and from Robert H. Treman State Park on 6/30/25, 26 days after the last *Le. piniperda* release. Samples were filtered in-house and submitted to Cornell's Environmental DNA & Genomics Core Facility (EGCF) for extraction and qPCR. Surprisingly, no samples contained positive detections of *Le. argenticollis*, and only one sample contained a positive detection of *Le. piniperda* eDNA. While the sample size is too small to draw any conclusions, the lack of detections during the peak season of fly reproduction and detectability suggests that our branch clipping methodology may need to be modified or greatly scaled up to be effective. It is possible that a larger sample of foliage would yield larger, more detectable quantities of eDNA. In the future, we plan to sample snow and deploy rainwater samplers in these field sites.

The lab experiment aimed to detect *Le. argenticollis* larval eDNA on eastern foliage in a controlled laboratory environment and determine quantities of eDNA that we could expect to find at different growth stages. Foliage was placed in a mating cage with *Le. argenticollis* flies, then their eggs were

transferred to predator-free foliage samples and kept in a growth chamber to hatch and rear. Larvae were removed and foliage rinsed and filtered at different larval growth stages: after 1 week (soon after hatching), after 2 weeks, and after 3 weeks (right before pupation). Results will be available in 2026.

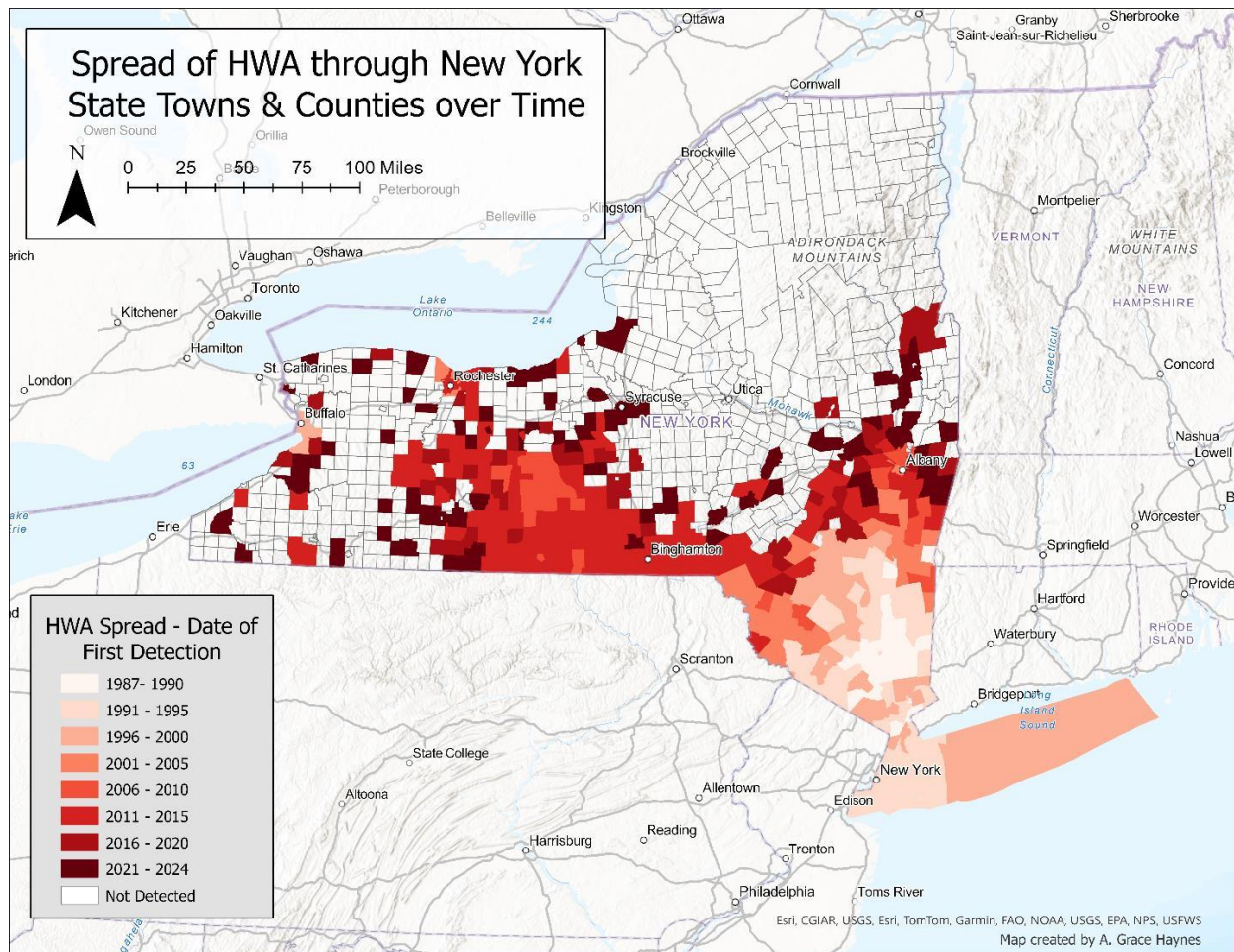
Investigating the diapause strategy of *Le. piniperda*: While the life cycle of *Le. argenticollis* is relatively well understood, *Le. piniperda*'s life cycle is still a bit mysterious. To model the life cycle, we need more information on their diapause strategy. Insects may use cues such as daylength or day/night temperature changes to start or stop diapause. In May, we started a new experiment using growth chambers to mimic field conditions of day/night temperature variation and daylength following the 30-year normals of western Washington. The control group got variable daylength and temperature, while two other treatments received constant daylength combined with either variable or constant day/night temperatures. If we see different strategies of development in the different treatments, it will point to the relevant cues controlling diapause in this species. This is important because 1) matching phenology with the local prey is crucial for the success of biological control predators and 2) the strategy to survive winter may also be critical, because winters tend to be colder and more variable in the Northeast. Data collection was completed in December and will be analyzed in 2026.

HWA Research

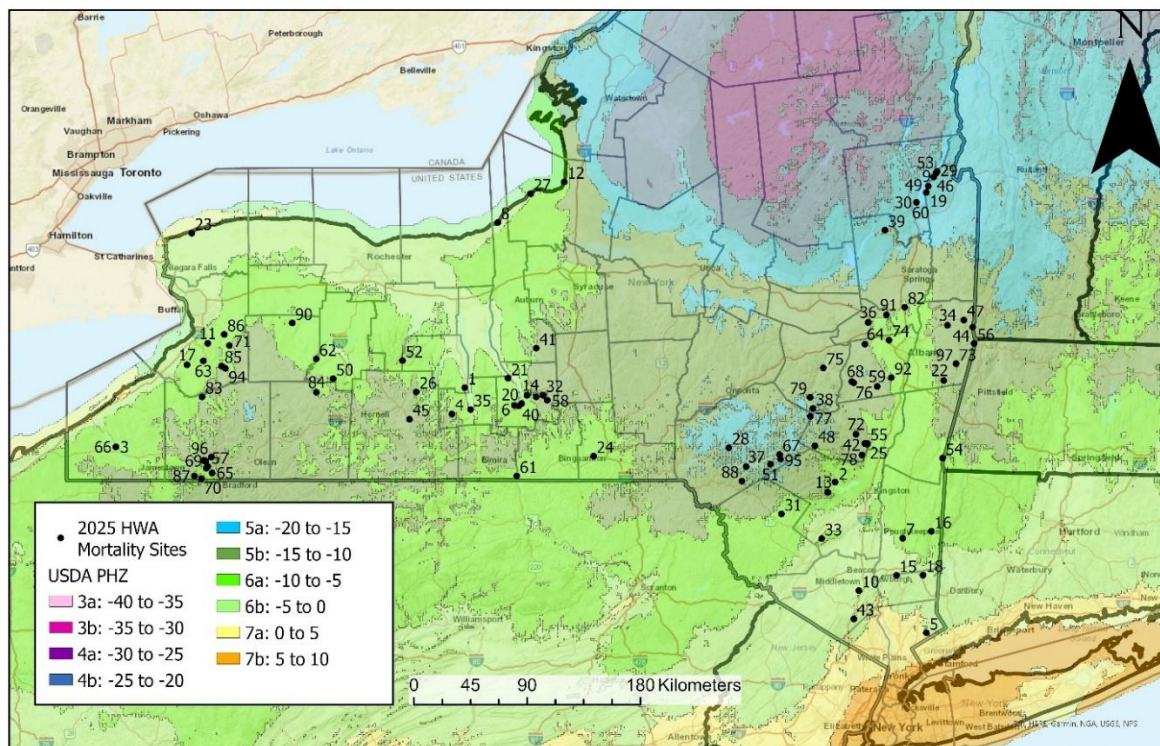
In Ithaca, aestivation break was first noted on September 22, 2025, aligning closely with the timing seen in past years. Partners across the region reported similar patterns, with observations from Virginia occurring around the same time and from Nova Scotia roughly two weeks later. These consistent seasonal cues help guide the timing of our fall field activities and beetle collections.

HWA Winter mortality: In late winter and spring of 2025, 97 sites were evaluated for hemlock woolly adelgid winter mortality. Samples were collected from a diverse range of locations across the state with the goal of evaluating the variation of HWA winter mortality throughout NY. This large collaborative effort enabled evaluation of HWA winter mortality throughout much of the introduced range and climatic variation in NYS. This information can inform HWA survey, management, and biological control research.

Hemlock woolly adelgid distribution in New York State, as of June 2024



Hemlock woolly adelgid winter mortality sampling sites (black circles) and USDA plant hardiness zones. Site ID number refers to the map below.



Mortality Table: Sample locations and percent HWA mortality. Color indicates plant hardiness zones. Site numbers are reference to locations on the map above and are arranged from lowest to highest mortality. *Mortality values of 100% should be viewed as <100%, since the probability of 100% HWA mortality is very low. Take collection date into consideration, as sampling dates prior to March likely missed mortality events.

Site ID Number	Site	Collection Date	% Mortality
1	Glenora Glen	3/27/2025	13.82
2	Ashokan	3/31/2025	21.84
3	Long Point SP - Roadside and Parking Lot (Early Winter)	1/13/2025	23
4	Sugar Hill State Forest	3/27/2025	29.49
5	Mianus River Gorge	4/4/2025	31.34
6	Robert Treman	3/24/2025	33.5
7	James Baird State Park	3/24/2025	37.58
8	Fair Haven Beach State Park	3/26/2025	37.6
9	Buck Mountain	Multiple Dates in March	39.67
10	Schunnemunk State Park	3/27/2025	41.59
11	Chestnut Ridge County Park	4/4/2025	43.18
12	Selkirk Shores State Park	3/24/2025	44.9
13	Sundown Wild Forest, Kanape Brook Trailhead	2/21/2025	45.48
14	Mann Library	1/10, 1/24	45.66
15	Fahnstock State Park	3/24/2025	46.38
16	Seven Wells/Stone Church Preserve	3/28/2025	47.5

17	Franklin Gulf County Park	4/10/2025	48.11
18	Wonder Lake State Park	3/24/2025	48.94
19	Pilot Knob; Second Sampling	3/22/2025	50
20	Buttermilk Falls	3/24/2025	51.4
21	Taughannock	3/28/2025	53.5
22	Albert Family Community Forest	4/7/2025	57.16
23	Wilson-Tuscarora State Park	3/6/2025, 3/7/2025	58.01
24	IBM Glen	4/15/2025	58.49
25	North South Lake Campground (South Mountain)	3/7/2025	59.71
26	Urbana State Forest	4/2/2025	60.27
27	Independence Park	4/4/2025	60.52
28	West Branch	3/31/2025	61.08
29	Black Mountain; Second Sampling	3/15/2025	61.65
30	Hearthstone Campground	3/9/2025	62.54
31	Neversink	3/11/2025	63.55
32	Ringwood Ponds	3/25/2025	63.75
33	Minnewaska State Park	3/27/2025	66.26
34	Pittstown State Forest	4/8/2025	68.22
35	Watkins Glen	3/24/2025	68.48
36	Plotterkill Preserve	4/4/2025	68.62
37	Pepacton South	3/31/2025	68.75
38	Schoharie North	3/31/2025	69.53
39	Great Sacandaga Lake	3/5/2025	69.96
40	Lick Brook	3/21/2025	69.96
41	Fillmore Glen	3/21, 3/28/2025	74.61
42	Kaaterskill Falls	2/25/2025	75
43	Harriman State Park	4/1/2025	76
44	Taconic Ridge State Forest	4/8/2025	76.63
45	Mossy Bank Park	3/19/2025	77.16
46	Fox Island Campground	3/1/2025	78.01
47	Tibbits State Forest	4/8/2025	78.09
48	Halcott Mountain Wild Forest	3/10/2025	78.22
49	Pilot Knob; Inman Pond Trail	2/15/2025	79
50	Rattlesnake WMA	3/18/2025	79.6
51	Dry Brook Ridge Wild Forest (Deerlick Brook rd)	3/8/2025	81.29
52	High Tor WMA	4/15/2025	81.82
53	Black Mountain/Elephant Mountain	2/22/2025	82
54	Taconic State Park- Cedar Brook	3/27/2025	82.28
55	North South Lake Campground (parking area)	3/7/2025	82.81
56	Taconic Ridge State Forest	2/22/2025	83.47
57	Allegany SP - ASP Rt. 1 Roadside	4/3/2025	84.5
58	Park Preserve	3/21/2025	84.89
59	Albany Water Department Property	4/6/2025	85.82
60	Hearthstone Campground	3/8/2025	86.91
61	Two Rivers State Park Recreation Area	3/21/2025	87.47
62	Letchworth State Park	Multiple March in dates	87.5
63	Boston County Forest	4/8/2025	88.14
64	Bozen Kill Preserve	3/10/2025	88.65

65	Allegany SP - Red House Brook	3/18/2025	89.25
66	Long Point SP - Roadside and Parking Lot	3/20/2025	89.4
67	Pepacton North	3/31/2025	89.67
68	Huyk Preserve - Lake Trail West	3/25/2026	90.32
69	Allegany SP - Old Ski Slopes	4/1/2025	92
70	Allegany SP - Kaiser / Parallel Cabin Loops	3/24/2025	93.41
71	Emery Park	4/8/2025	93.57
72	Colgate Wild Forest	3/10/2025	93.6
73	Cherry Plain State Park	4/6/2025	93.66
74	Albany Pine Bush	3/11/2025	94.29
75	Vroman's Nose Unique Area	2/21/2025	94.32
76	Huyk Preserve - Rensselaerville Falls	3/25/2025	94.34
77	Schoharie South	3/31/2025	94.8
78	Platte Clove Preserve	2/25/2025	95.69
79	Minekill State Park	3/18/2025	95.84
80	Ellis Hollow	3/21/2025	95.9
81	Allegany SP - Baystate / North Country Trail	3/4/2025	96.1
82	Ushers Rd State Forest	4/4/2025	96.55
83	East Otto	3/6/2025	97
84	English Hill	3/19/2025	97
85	Kissing Bridge	3/21/2025	97
86	Knox Farm State Park	3/17/2025	97.23
87	Allegany SP - Quaker Old Wastewater	2/24/2025	97.5
88	Cherry Ridge State Forest	2/22/2025	97.55
89	Allegany SP - Hemlock Hollow to Baystate Connection 1	3/10/2025	97.76
90	Carlton Hill MUA	3/10/2025	98
91	Indian Kill Preserve	4/4/2025	98.67
92	Hollyhock Hollow	3/11/2025	98.88
93	Allegany SP - Hemlock Hollow to Baystate Connection 2	3/10/2025	99
94	Sprague Brook Park	4/7/2025	99.63
95	Dry Brook Ridge Wild Forest (Huckleberry Brook rd)	3/8/2025	100*
96	Allegany State Park-Summit	2/20/2025	100*
97	Cherry Plain State Park	3/11/2025	100*

Statewide HWA winter mortality data summary since 2021

Mortality rates			
Sites	Low	High	Average
2021-2022			
14	22.60%	96.50%	76.60%
2022-2023			
35	45.40%	100%	83.30%
2023-2024			
37	2.40%	74.50%	30.80%
2024-2025			
96	13.80%	99.90%	74.70%

HWA Winter Mortality Conclusions: Hemlock woolly adelgid winter mortality has a significant influence on tree health, population building, spread, and predator populations, so monitoring the impacts of winter temperatures offers valuable insight. While northern states often receive the benefits of winter killing events, close monitoring of HWA mortality has shown mortality is highly variable across the landscape and between years. Winters of 2021-2023 experienced high mortality in some areas (between 95-100%), but last winter 2023-2024 experienced relatively low HWA winter mortality statewide, leading to high density populations of HWA in many areas. This year's average winter mortality data (2024-2025) indicate that we have returned to relatively high HWA mortality but highlights the importance of understanding the range of observed mortality. With many parts of the state experiencing higher mortality rates this year, there were pockets of unexpectedly low mortality. For example, sites in the Seneca Lake watershed showed low mortality, while other Finger Lakes watersheds appeared to be at the higher end of the spectrum. These results support the need for fine-scale annual mortality monitoring, with NY being a climatically diverse state leading to large, and often unexpected, variations in HWA winter mortality across the landscape.

HWA Winter Mortality Acknowledgements: We would like to thank all the statewide collaborators that contributed to this effort, through the collection of data and/or shipment of samples, including NYS Department of Environmental Conservation, NYS Office of Parks, Recreation, and Historic Preservation, NYS PRISM, land trusts and many private citizens statewide.

HWA Integrated Pest Management Research

Paper accepted into Journal of Insect Science: Our paper detailing our composite HWA predator rearing methods was published in *Journal of Insect Science*. Elizabeth M. D'Auria, Nicholas J. Dietschler, Tonya D. Bittner, Isis A.L. Caetano, Mark C. Whitmore. Methods for collecting and rearing three sympatric biocontrol agents of *Adelges tsugae* (Hemiptera: Adelgidae) in eastern North America. *Journal of Insect Science*. <https://doi.org/10.1093/jisesa/ieaf107>



Paper accepted into Biological Invasions: Dietschler N.J., Liu F., Celis S.L., Whitmore M.C., Agrawal A.A. 2025. Multi-trophic interactions and niche partitioning in the native range informs biological control in forests invaded by the hemlock woolly adelgid. *Biological Invasions*. <https://doi.org/10.1007/s10530-025-03739-6>



Reciprocal infestation study: Research was completed in May 2025 to better understand how HWA hemlock host preference and plant defenses shape HWA performance. A greenhouse experiment was conducted, where both eastern and western hemlock were inoculated with the introduced southern Japanese lineage of HWA. Half of each species of tree were treated with methyl-jasmonate to stimulate herbivory-induced reactions in the trees. Hemlock woolly adelgid survival and development was assessed over two collections, and foliage samples were collected to assess plant chemistry at each collection.

Uptake and movement of imidacloprid treatments: This research explores whether imidacloprid can be detected in hemlocks that have not been directly treated but are located near treated trees. We are working with our chemist collaborator to reanalyze samples using an updated LCMS protocol. A last round of samples (two-year post treatment) was collected and is currently being analyzed.

Section 2: Hemlock Conservation Teams

Adirondacks Team

The NYSHI Adirondack Conservation Team continued to play a central role in protecting northern New York's hemlock forests in 2025. Working across rugged terrain, remote backcountry areas, and extensive lakeshore landscapes, the team integrates chemical treatment, biological control support, and systematic field surveying to suppress hemlock woolly adelgid (HWA) in strategic areas. Their work provides on-the-ground conservation capacity in a region where hemlock stands are widespread and highly vulnerable.

During 2025, the team treated **2,126 trees across (26,888 inches DBH) 113.5 acres**, which represents two very productive treatment seasons to date. Treatments were carried out using both basal bark spray and stem injection. Basal bark applications remained the most common method because they are efficient in challenging Adirondack terrain and allow staff to reach dense, rugged stands. Most trees were treated using a 5 percent imidacloprid formulation, which provides long-lasting HWA suppression. In heavily infested stands, the team applied a mixture of 5 percent imidacloprid and dinotefuran. Dinotefuran provides faster suppression of adelgid populations and is especially useful when stabilizing declining trees or preparing sites for biological control releases.



NYSHI Technician applying chemical treatment.



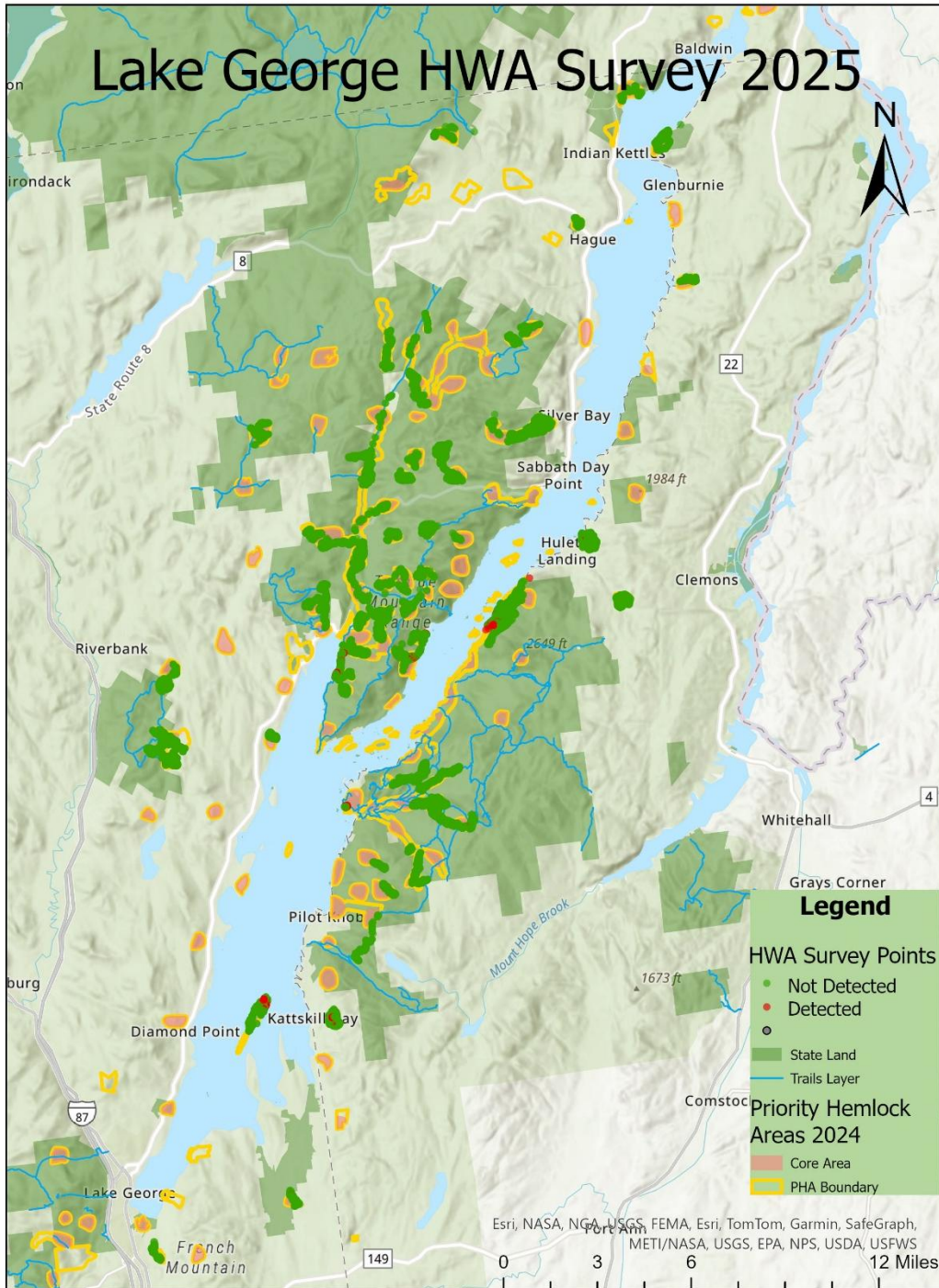
NYSHI Adirondacks Team and dedicated volunteer, Bill Widrig.

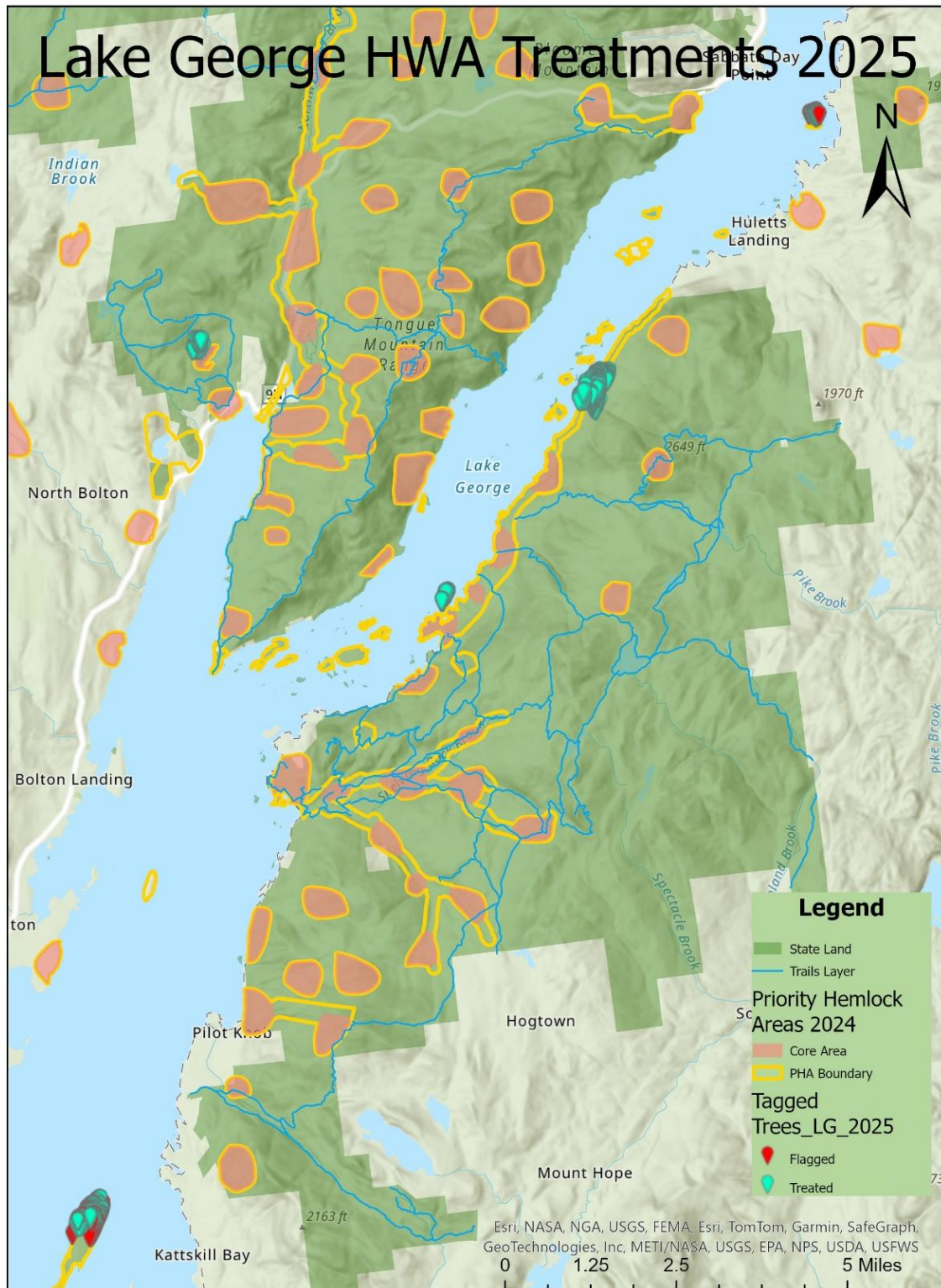
Survey efforts expanded further this year. The team surveyed **7,778 acres**, producing the most comprehensive annual dataset for the region. Survey coverage included **6,621 acres in the Lake George watershed, 963 acres in the Lake Champlain watershed, and 194 acres in the Great Sacandaga Lake area**. These surveys helped identify new infestations, refine the boundaries of known infestations, and confirm the continued absence of HWA in important hemlock stands. The resulting dataset directly supports NYSHI's statewide monitoring, informs future treatment priorities, and strengthens efforts to target suitable areas for biological control.

Throughout the year, the Adirondack Conservation Team also supported NYSHI's biological control program. Staff assisted with *Laricobius nigrinus* collection events and participated in releases at selected Adirondack locations. Their familiarity with local conditions helps ensure that predator releases are placed in appropriate sites and that follow-up monitoring is well aligned with on-the-ground observations.

Collaboration continued to be an important part of the team's work. Participation in Lake George Hemlock Coalition meetings allowed NYSHI and regional partners to coordinate survey coverage, share information on treatment progress, and discuss long-term planning needs across the basin. These partnerships help maintain consistent hemlock conservation strategies across jurisdictions and land ownerships. They also helped attract additional resources, with the Coalition providing \$40,000 and the East Shore Schroon Lake Association contributing \$10,000 to support two temporary technicians—demonstrating how strong partnerships can generate additional capacity.

Overall, the Adirondack Conservation Team's contributions in 2025 reflect a committed, field-driven approach to hemlock protection. Their treatment efforts stabilized vulnerable stands, their survey coverage expanded understanding of HWA distribution in northern New York, and their participation in biological control initiatives supported long-term resilience in the region's hemlock forests.





Coordination and Collaborations

A group of people are seated at wooden picnic tables under a large, covered pavilion with a high, vaulted ceiling. The pavilion has large windows on the left side. In the background, a man stands near a brick building, pointing at a large screen displaying a presentation. The scene is outdoors, with trees visible behind the building.

25



NYSHI also participated in the New York State Invasive Species Expo, where staff presented current research and management approaches and connected with colleagues across the region. Additional public outreach occurred at Cornell Entomology Department's Insectapalooza, where NYSHI staff provided hands-on education to hundreds of visitors about hemlock conservation and forest health.

Alannah McGarry simulating beat sheeting for visitors at Insectapalooza.

Collaboration continued in the field as well. The Harriman State Park *Laricobius* collection, supported by partners from multiple states, was the largest redistribution effort conducted in New York to date. Strong partnerships with the PRISMs remained central to outreach, surveying, volunteer engagement, and the continued use of iMap Invasives for high-quality statewide reporting.

In the Adirondacks, NYSHI worked closely with the Lake George Hemlock Coalition, participating in meetings and coordinated planning efforts to prioritize treatments, surveys, and long-term conservation strategies within the Lake George basin.

Together, these efforts reinforced the cooperative foundation that supports effective hemlock conservation across the state.

Talks and Trainings

1/22/2025: "Hemlock Woolly Adelgid: Adirondack Survey 2025," presented at the APIPP Winter HWA Challenge Training. 30m talk, 65 attendees. Caroline Marschner presenting.

1/24/2025: "[Biocontrol of Hemlock Woolly Adelgid: Challenges, success, and hope](#)," presented at the January 2025 Webinar by the Invasive Species Centre. 1h 10m talk, Nicholas Dietschler presenting. 187 views online as of 4/8/2025.

1/29/2025: "Hemlock Woolly Adelgid: Winter Mapping Challenge," presented at the iMap Winter HWA Challenge. 30m talk, 35 attendees. Caroline Marschner presenting.

2/27/2025: "[Hemlock Woolly Adelgid and Other Forest Threats: Engaging Science & Art to Meet the Challenge](#)," presented at Cornell University's Mann Library for the opening of an art exhibit highlighting the threat of invasive forest insects. 30m training, ~70 attendees. Grace Haynes presenting.

2/28/2025: "Hemlock Woolly Adelgid Background, Biology, and Ecology," presented at Cornell Cooperative Extension Erie County's pesticide training. 30m talk, 15 attendees. Grace Haynes presenting.

2/28/2025: "HWA Management," presented at Cornell Cooperative Extension Erie County's pesticide training. 30m talk, 15 attendees. Caroline Marschner presenting.

3/14/2025: "Hemlock Woolly Adelgid Background, Management, and Research," presented for the Water Quality Symposium held by Ontario County Soil & Water Conservation District. 1h talk, 17 attendees. Grace Haynes presenting.

3/18/2025: "[Pest Patrol: Phenology informing pest management](#)," presented for the USA National Phenology Network's online webinar. 30m talk, 50 attendees. 134 views online as of 4/8/2025. Nicholas Dietschler presenting.

4/12/2025: "Haynes & Lehmann, HWA, Science and Art," presented at Mann Library at Cornell University. 1h talk, Grace Haynes presenting.

6/6/2025: "What Is Environmental Art and What Can It Do for Us?" presented at Mann Library at Cornell University. 1h talk, Mark Whitmore presenting. The event also included tabling by NYSHI staff. 25-30 attendees engaged at the talk and information table.

6/12/2025: "The Lingerin Hemlock Project: Protecting Tomorrow's Hemlocks," presented at Eastern Lake Ontario Invasive Species Symposium. Caroline Marschner presenting.

07/03/2025: "Managing Hemlock Woolly Adelgid with Nicholas Dietschler," radio/podcast interview aired on From the Forest, a long-running forestry program from catskillforest.org. 50m interview, Nicholas Dietschler.

07/22/2025: "LG Hemlock Coalition Field Meeting and HWA Survey," field meeting and survey at Lake George Elementary School. 3h activity and meeting, Mark Whitmore, Matt Del Buono, Ben Furber. 12 attendees.

07/30/2025: "Long-term Monitoring and the Search for Resistant Hemlocks," presented at the 11th Annual Hemlock Woolly Adelgid Managers' Meeting (online). 15m talk, Caroline Marschner. 105 attendees.

08/01/2025: "The fight against hemlock woolly adelgid," episode on the Great Northeast Podcast. 37m, Mark Whitmore and Jim Lieberum.

09/16/2025: "Hemlock Management Across New York State," presentation at the 2025 New York State Invasive Species Expo. 20m talk, Nicholas Dietschler and collaborators. 35+ attendees.

09/16/2025: "Joining the Eastern Hemlock Lingerin Hemlock Plot Network," presentation at the 2025 New York State Invasive Species Expo. 1h talk, Matthew Del Buono. 25+ attendees.

09/16/2025: "Update on biocontrol in NYS," presentation at the 2025 New York State Hemlock Managers' Meeting. 20m talk, Nicholas Dietschler. 50 attendees.

09/16/2025: "Update and discussion of soil application of imidacloprid to treat HWA," presentation at the 2025 New York State Hemlock Managers' Meeting. 20m talk, Nicholas Dietschler. 50 attendees.

09/18/2025: "HWA biological control: Landscape scale implementation," presented at Lew Beach in collaboration with the Beaver Kill Valley Land Trust. 30m talk, Nicholas Dietschler. 15 attendees.

09/25/2025: "Update on pests in NYS forests", presentation at Arnot Research Forest sponsored by Cornell Cooperative Extension. 2h, Mark Whitmore. 38 attendees.

10/18/2025: "[Insectapalooza](#)" is hosted by the Department of Entomology at Cornell University. The NYSHI team tabled at a the one-day Insect Festival and engaged hundreds of visitors with information about hemlock conservation and an interactive activity for youth.

10/21/2025: "Hemlock Conservation Demonstration Event" presented at Lourdes Camp, Ten Mile Point, Skaneateles, New York in partnership with the Skaneateles Lake Association and Cornell Cooperative Extension. 45m talk, 20 attendees. Nicholas Dietschler and Matthew Del Buono presenting.

11/13/2025: Field demonstration and lecture for Cornell University's [NTRES 2100 Introductory Field Biology](#) undergraduate class. 1h and 30m talk and training, 30 attendees. Nicholas Dietschler and Henry Myers presenting.

11/20/2025: "Myriad Uses of Environmental DNA Technology in Agriculture and Forestry & Resilient Regenerated Forests with Slash Walls" presented at Cornell Cooperative Extension's [Agriculture, Food & Environmental Systems In-service](#). 45m talk, 16 attendees. Tonya Bittner presenting.

11/11/2025: "A History of Invasive Forest Pests in North America" presented at Cornell University's NTRES 2100 Introductory Field Biology undergraduate class. 30m talk, 20 attendees. Mark Whitmore presenting.

12/05/2025: "Hemlock Woolly Adelgid and the Lingering Hemlock Project" presented at Oneida-Herkimer-Madison BOCES. 1h and 30m talk and training, 25 attendees. Matthew Del Buono presenting.

12/11/2025: New York State Hemlock Initiative updates provided to ESSLA (East Shore Schroon Lake Association) board. Presented by Mark Whitmore.

Media Coverage

1/22/2025: "[Adirondack-related projects the governor wants to fund in her \\$252B budget](#)" in Adirondack Explorer. Describes allocation of Environmental Protection Fund, including the New York State Hemlock Initiative's funding for control of hemlock woolly adelgid.

2/24/2025: "[NYS invasive species illuminated by art and science exhibit](#)" in the Cornell Chronicle. Describes the art and science exhibit focused on invasive species that is currently on display in Cornell University's Mann Library. The New York State Hemlock Initiative contributed scientific text to accompany each work of art to share important information on the featured invasive species.

5/1/2025: "[Hemlock woolly adelgid's impact on Adirondack region's hemlocks, ecosystems and communities](#)" in Adirondack Almanack. This article explores the threat of hemlock woolly adelgid to Adirondack forests, highlighting the ecological and economic stakes, current management efforts, and ways the public can get involved in protecting hemlocks. It also features an image of NYSHI Research Support Specialist Nicholas Dietschler.

07/28/2025: "[DEC and Partners Announce Hemlock Woolly Adelgid Confirmed on the Western Shore of Lake Champlain and Near the North End of Great Sacandaga Lakes](#)" press release published by DEC.

07/25/2025: "[Lake George CSD helps combat invasive hemlock woolly adelgid](#)" published by The Post Star.

07/25/2025: "[Hemlock woolly adelgid confirmed near Lake Champlain and Great Sacandaga Lake](#)" published in FingerLakes1.com.

07/25/2025: "[Hemlock Woolly Adelgid confirmed on Lake Champlain shore, Great Sacandaga Lake dam](#)" published by Adirondack Almanack.

07/28/2025: "[New York warns of invasive species on shores of Lake Champlain](#)" published by WCAX.com and covered on news broadcast.

07/28/2025: "[New York warns of invasive species on shores of Lake Champlain](#)" published by MSN.

07/29/2025: "[Hemlock Woolly Adelgid Presence Confirmed](#)" published by Morning AgClips.

07/29/2025: "[Tree-killing insect confirmed near Lake Champlain and Sacandaga Lake](#)" published by MSN.

07/30/2025: "[Tree-killing insect confirmed near Lake Champlain and Sacandaga Lake](#)" published by Times Union.

07/30/2025: "[Invasive Hemlock Woolly Adelgid Found at Lake Champlain, Great Sacandaga Lake](#)" published by New York Almanack.

07/31/2025: "[Eastern hemlock-killing insect confirmed in new areas in New York](#)" published by Olean Times Herald.

07/31/2025: "[Hemlock woolly adelgid spreads to Lake Champlain: Understanding the threat](#)" published by Adirondack Explorer.

07/31/2025: "[DEC confirms hemlock woolly adelgid infestation on Great Sacandaga Lake](#)" published by the Daily Gazette.

07/31/2025: "[Invasive tree-killing pest creeping deeper into Adirondacks](#)" published by Syracuse.com CNY Outdoors.

08/06/2025: "[Invasive tree-killing pest creeping deeper into Adirondacks](#)" published by MSN.

08/08/2025: "[Hemlock woolly adelgid invades Lake Champlain, Great Sacandaga Lake](#)" published by News10.com Northeast News.

08/08/2025: "[Hemlock woolly adelgid invades Lake Champlain, Great Sacandaga Lake](#)" published by MSN WWTI Watertown.

08/19/2025: "[Invasive hemlock woolly adelgid gaining ground in eastern Adirondacks](#)" published by Outdoor News.

09/04/2025: "[Officials issue warning as harmful insect spreads across US region: 'Every report helps us track its spread'](#)" published by The Cool Down Outdoors.

10/4/2025: "[LGHC asking public to help track the hemlock woolly adelgid](#)" published by The Sun.

10/17/2025: "Silver Fly Establishment in New York Advances Hemlock Conservation" included in the DEC's October's Forests, Plants, and Land Conservation News.

10/24/2025: "[Silver Fly Combating Invasive Hemlock Woolly Adelgid](#)" published by the New York Almanack.

11/7/2025: "[Snake Hill – A Frontline in the Fight Against Hemlock Woolly Adelgid](#)" published in the Saratoga Plan.

11/10/2025: "[Effort to save hemlocks moves ahead](#)" published in the Times Union.

12/18/2025: "[Learning Brought to Life: Transformative Experiences in Introductory Field Biology](#)" by Leah Chang. In Cornell Daily Sun. The article briefly mentions participation in NTRES 2100 Introductory Field Biology field activity related to hemlock health and conservation.

Digital Outreach

Facebook: 35 posts. Views: 40.4 K, 1,589 followers (103 new). Almost all are from New York, approximately evenly distributed across age classes from 25 to 65+, 55.3% women/44.7% men

Instagram: 35 posts. Views: 22 K, 1,286 followers (144 new). Almost all from New York, mainly ages 25-54, 61.7% women 38.3% men

Website: 11,847 user sessions, 7,573 users, 19,557 pageviews. Average time spent on the website was 4 minutes and 4 seconds.