



Newsletter
2014 — Issue #1

Hemlock Happenings

A Publication of
Save Georgia's Hemlocks

Hemlock Happenings is an e-newsletter for members, donors, and friends of Save Georgia's Hemlocks to share hemlock news, service and educational opportunities, technical updates, and announcements. If you'd like to submit an article or announcement, please send it to the e-mail address below. Your feedback is always appreciated.

News from the front

This spring brought mixed news from the forest. For the good news, reports from the U. S. Forest Service, several state agencies, and independent sources indicated that the recent extremely cold winter caused significant adelgid mortality in the northeastern and mid-Atlantic states and in the southeast as well at elevations above 2000 feet. The unusually late spring saw a delay in the first generation HWA hatch, giving the embattled hemlocks a welcome respite as evidenced by a strong flush of new bright green tip growth on most of them.

But there's some bad news too. The adelgids can be counted on to make a come-back. More hemlocks in the eastern counties of north Georgia are dying; trees in the central counties are getting sicker; the infestation is gaining traction in the western counties; and sadly many property owners are still unaware of the crisis, the likely consequences, or the available solutions. But even this gloomy picture may have a silver lining as more people are learning about the problem and how they can save their trees. And better yet, many of these good folks are sharing the message with their neighbors.

Two late developments are coming to light as this newsletter is being written. Due to a combination of the cold winter and the slightly drier spring, we saw no recurrence in May or June of the needle blight that did so much damage last year — that is, until last week, when property owners in Gilmer County discovered new outbreaks of the fungus. Reports of foliar damage by spruce spider mites have also begun to come in from several north Georgia counties and the Chattanooga area. There is more information on both of these pests later in this newsletter

HEMLOCK HELP PROGRAM GROWTH

By the end of 2012, woolly adelgid infestations were confirmed in all 19 north Georgia counties within the native hemlock range, stretching from Rabun County in the east to Dade County in the west. In line with our goal to offer meaningful resources and services throughout the affected areas, we have expanded our Hemlock Help Program to serve 16 of those counties, with Hall and Stephens being the latest. Before the end of this year we plan to add Banks, Gordon and Cherokee Counties and will be scheduling presentations and training there.



We have grown our corps of active hemlock helpers to include 169 trained Facilitators in Georgia, 54 in other southeastern states, and a great many other volunteers. During the rest of this year, SGH will continue our educational programs to raise awareness and our charitable service projects to help property owners and public land managers save more trees. We're also undertaking several new initiatives to increase the reach of our message, provide more direct hands-on service, and multiply our capabilities through partnerships with other nonprofits, public agencies, and volunteer groups.

We extend sincere thanks to all our members, volunteers, and friends who have helped make these efforts possible and invite you to read more about them in this newsletter.

MORE TROUBLE FOR HEMLOCKS

The adelgid is not the only pest harming the hemlocks. Two more you'll want to be on the lookout for are needle blight and spider mites. While neither of these normally kills mature trees, either of them can certainly add more stress to hemlocks infested with adelgids and in severe cases may lead to tree death

Needle Blight

During the prolonged mild but very wet weather in late spring through fall of last year, the hemlocks suffered a severe outbreak of a fungus believed to be *Rosellinia* that causes needle browning and defoliation ranging from random patches or branches to whole trees.



Symptoms include patches of light chocolate brown needles matted together.

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Spruce Spider Mites

A cool season pest, the spruce spider mite is considered one of the most destructive spider mites in the United States, and reports of damage to hemlocks are being received now from Georgia and Tennessee. In spite of its name, this pest attacks and injures the foliage of over 40 species of conifers, including all trees used in Christmas tree production. Its preferred host is spruce (Colorado blue, Norway, Dwarf Alberta, and white), but it will also feed on arborvitae, cedar, dawn redwood, juniper, hemlock, larch, pine, yew, and occasionally other conifers. It can cause considerable damage early in the spring and again in the fall.

If spider mites are already present on a tree, the use of Imidacloprid can sometimes trigger a flare of their population. The mites themselves are green to deep olive to brownish red but are very tiny (1/25 inch long) and therefore difficult to see except by close inspection. Described by the Missouri Botanical Garden, the first indication of spruce spider mite damage is an off-green color, mottling or stippling of the needles, which may not be very noticeable until early or mid summer, months after the damage was actually done.

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CALENDAR CORNER (updated)

Sun., July 13 – SGH Annual Meeting & Picnic at Unicoi State Park, featuring a presentation on climate change by Craig Tilley and special music by Dawn Davis.



Dawn Davis
Photo: Nathan Baerreis

Craig Tilley
facebook.com/tilley.craig

Sat., Aug. 16 – Hemlock treatment project with the U. S. Forest Service in the Bowers Cove hemlock conservation area just south of Blairsville.

Sat., Sept. 27 – SGH-BMTA Annual Hike & Help the Hemlocks, including a hemlock treatment project with the U. S. Forest Service in the Little Rock Creek hemlock conservation area (HCA) and a family friendly hike led by members of the Benton MacKaye Trail Association.

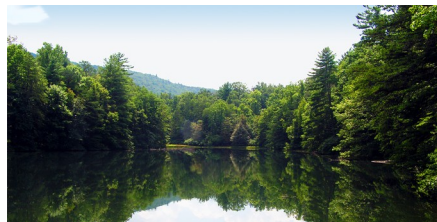


Sat., Oct. 4 – SGH info booth at Foxfire Mountaineer Festival in Clayton.

Sat., Oct. 4 & Sun., Oct. 5 – SGH info booth at Indian Summer Festival in Suches.

Sat., Oct. 4 & Sun., Oct. 5 – SGH info booth at the Georgia Marble Festival in Jasper.

Sat., Nov. 8 – Hemlock treatment project with the U. S. Forest Service in the Dockery Lake HCA near Dahlonega.



As you can see, there's a lot going on and we need volunteers for all of these events, so please check our **Schedule of Events** page for details and sign up.

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Needle Blight

Treating trees infected with needle blight requires a sequence of properly timed foliar applications of fungicides using a high-powered sprayer but taking great care to keep the material out of waterways. While these treatments have been observed to slow or stop the immediate spread of the fungus, the long-term effects on recurrence are still uncertain. The best approach seems to be preventive, beginning a spraying program in the spring for trees that showed infection the year before or are growing in fungus-favoring conditions, such as small trees growing close together in a high-moisture setting with limited air circulation.

The most substantial research on the problem dates back to the 1930s, but very little new information has been published since then. So in an effort to learn more about the problem and any possible solutions, SGH started a research project to gather information from volunteer "citizen scientists" and various state and federal agencies with the initial goal of mapping the distribution, severity, and lifecycle of the disease. While the weather this spring and early summer was not conducive to another serious outbreak, we're now beginning to receive new reports of needle blight infections, so we will continue the data gathering phase.

If you see this fungus on hemlocks in the woods or on private property, please let us know. And if possible, snap a photo and email it to us along with the location.

Hemlocks available for adoption

We currently have the following hemlocks on hand in Dahlonega:

- Hundreds of seedlings 6-12" tall that can be dug on request and delivered bare-root
- Dozens of saplings 12-24" tall in 1-gallon containers
- 6 trees about 3' tall in 3-gallon containers
- 3 large balled-and-burlapped trees about 5'tall
- Larger trees are sometimes available too.



All have been pretreated for adelgids and free of other hemlock pests. Special planting and care instructions will be provided at the time of adoption. The proceeds of adoptions are used to support our education and charitable service initiatives, and a portion of the adoption fee is tax-deductible.

Call the Hemlock Help Line for availability and suggested donation by size.

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Spruce Spider Mites



Spider mite damage

Usually older, inner needles are attacked first. Damaged needles turn yellow then bronze in June and fall prematurely. Fine webbing may also be visible. In severe infestations, twigs and branches can drop all their needles and die leaving dead areas on the plant; stressed trees may even be killed.

According to forest entomologist Mark Dalusky, mite infestations often self-resolve, especially in a forested setting, though not always. Since there are several other causes of similar symptoms and beneficial mites may also be present, it is important to correctly identify a spider mite infestation before attempting to treat it and then to choose the appropriate treatment method(s), material(s) and timing so as to do the most good and least harm. It is recommended that concerned property owners take a foliage sample to their Extension Service agent for diagnosis and treatment advice.

For more information on identifying a spider mite infestation and the biological, cultural, and chemical controls that are available (in that order of preference), readers can review the full version of this article on the **Resources** page of our web site.

Photos requested

If you have photos of any of the subjects listed below or other hemlock-related pics that might be of interest to our newsletter and web site readers, we'd sure appreciate your emailing them to us along with a brief caption or description.

- SGH activities you participated in
- Hemlocks with adelgids or other problems such as spider mites or needle blight
- Hemlocks recovering following application of chemical or biological controls
- Beautiful woodland, waterway, or mountain scenes of healthy hemlocks
- Scenes of devastated hemlocks in the forest, along waterways, or residential settings.
- Individuals or groups engaged in any sort of effort to save the hemlocks

EDUCATION STATION (updated)

SGH Hemlock Help Clinic and Facilitator Training Workshops are scheduled for the following dates and places:

Sat., July 19 – White County, Helen
Sat., July 26 – Habersham County, Clarkesville
Sat., Aug. 2 – Rabun County, Clayton
Thurs., Aug. 7 – Fannin County, Blue Ridge
Sat., Aug. 9 – Lumpkin & Dawson Counties, Dahlonega
Wed., Sept. 10 – Pickens County, Jasper
Wed., Sept. 17 – Murray County, Chatsworth
Wed., Sept. 24 – Banks County, Toccoa
Wed., Oct. 1 – Gordon County, Calhoun

We will also be scheduling (or rescheduling) these classes for Cherokee County the “green industry” at large and hope to conduct another Facilitator Training Workshop in Cloudland Canyon in conjunction with a treatment project in the park.

For any of these events, please see our **Schedule of Events** page for details and sign up.

Continuing Education Credits for Professionals

The Georgia Department of Agriculture, ISA (southeastern division), and Environmental Educators in Georgia are now awarding continuing education credits to professional pesticide applicators, arborists, and environmental educators who attend SGH Hemlock Help Clinics and Facilitator Training Workshops.

The number of credits varies by course, professional category, and awarding agency. Individuals wanting to earn credits must simply register through SGH in advance by phone or email, so please visit our **Schedule of Events** page and click on the “Professional CEUs available” notation beside the particular course for details.

Yea Youth!

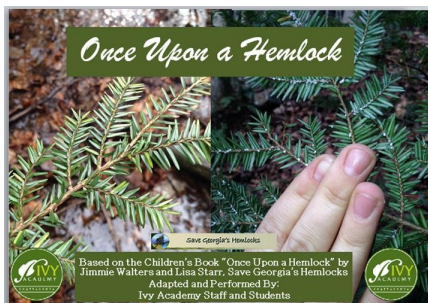
It's never too early to start helping kids become aware of the fascinating and complex relationships among the plant, animal, and human components of our environment and the special responsibility (and privilege) we each have in caring for it. Believing that young people are the key to a healthy future, SGH has special outreach programs for schools, scout troops, and environmental/recreational youth groups to give them opportunities to learn and get involved, and they are already making a difference.

Here are two examples of the many wonderful ways in which youth are stepping forward.

Students at Chestatee High School in Gainesville,

under the leadership of science teacher Lisa Taylor, have received several presentations about the importance of preserving the hemlocks and decided this spring to beautify their campus by planting a dozen large hemlocks along with some hardwoods in front of the school. They also started a hemlock nursery in their greenhouse, potting about 100 saplings donated by SGH and planning to raise them for future adoption or reforestation projects.

In Tennessee, **Ivy Academy in Chattanooga** is leading the way with the launch of a hemlock information web site designed by student Noah Lane for his senior project. Under the sponsorship of Environmental Programmer Holly Slater, Noah and fellow students also created and presented a play called “Once Upon a Hemlock” (based on a short story of the same name written by SGH members Jimmie Walters and Lisa Starr) that shares the hemlock story with children and their families and teaches that even young children can be hemlock heroes.



Last year we were joined by the Georgia Tech Trailblazers Club for our annual Hike and Help the Hemlocks, and the year before we were privileged to support John Touchstone as he planned and managed an Eagle Scout project to save the hemlocks at Foxfire in Rabun County. These have been such positive experiences, and we are eagerly seeking more, so if you know of any young people (or their teachers/sponsors) who want to make a difference, please ask them to get in touch.

In the meantime, here are some educational and service ideas for kids of all ages:

- Make a poster, write a short story, or compose a song about the hemlocks.
- Make a list of the plants and animals that depend on hemlock habitat. Then go out in the woods and see how many you can find.
- Take an inventory of the hemlocks on a property, including their trunk diameter and

any signs of HWA infestation or other hemlock pests. This can help a property owner take the first step to save their trees.

- With permission from the property owner, help rescue hemlock saplings that are not being treated for adelgids.
- Plant more hemlocks at home, help SGH pot hemlock seedlings for future adoption, or work with us to start a hemlock nursery at your school or another community location.



- Get some friends together and put on the “Once Upon a Hemlock” play. We can supply the script and ideas for props.
- Give a short presentation about the hemlocks to a class or group. We can supply the visuals and handouts.
- Join us for a hemlock help project in the national forest, a state park or wildlife management area.

Grants for Pesticide Licenses

SGH is dedicated to saving endangered hemlocks through education and charitable service, including ensuring easy access to accurate hemlock information and advice, enabling property owners to do as much as possible to treat their own trees, helping them find qualified treatment professionals when needed, and providing direct assistance to property owners and public land managers for the care of hemlocks.

In many north Georgia counties within the native hemlock range, there is a current shortage of treatment professionals who possess the necessary Pesticide Contractor's License and who have specific knowledge and experience in treating hemlocks. Therefore, the SGH Board of Directors believes it is in the best interest of our mission to encourage and assist eligible individuals in underserved counties of north Georgia to obtain a Pesticide Contractor's License in the appropriate category or categories.

The Board may award up to 3 grants per year to cover out-of-pocket expenses associated with obtaining the License, in accordance with the SGH Grant Agreement. Anyone who is interested in pursuing this offer is invited to contact the Hemlock Help Line for additional information and application instructions.

FOCUS ON FACILITATORS

Strengthening education and service

Similar to the way Master Gardeners work, SGH Facilitators have a dual role of education and service. They receive a great deal of hemlock-related training and acquire a unique set of practical skills that are likely to be valuable to them personally or professionally but are primarily intended for sharing with others and serving the community.

Our network of Facilitators is the primary vehicle for providing advice and assistance directly to property owners and is also a key source of volunteers for everything we do, and it's very important that Facilitators keep their knowledge and skills current and actively use those assets in support of the hemlock cause. Therefore, in the spirit of continuous improvement in this vital program, SGH is taking a new approach in two areas.

Education: Recognizing that information is updated and techniques are improved from time to time, all Facilitators trained in 2014 and forward are asked to take a short refresher course within 3 years of their initial training to ensure that their knowledge and skills remain up to date, become familiar with new resources and services available to them and the community, and learn more about local needs and opportunities to serve.

Service: All Facilitators trained in 2014 and forward are also asked to make a commitment to participate in at least one major educational event or charitable service project each year and to contribute at least 4 hours of other hemlock-related activity per month such as reading or researching, talking with others in the community, helping plan a neighborhood project, or making on-site visits.




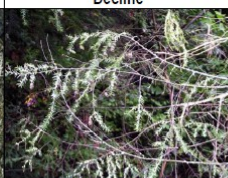






Treatment project in the national forest

We are so grateful to all our Facilitators for sharing your time, energy, and talents to help save the hemlocks, and we believe these two changes will contribute to increasing personal engagement, sharing more accurate up-to-date information, and providing more hands-on service on behalf of the hemlocks and everyone who values them.

Reading the trees

The first step in solving a problem is identifying it. When it comes to hemlocks with adelgids, that means assessing how severe the infestation is. If the branches are low enough to see them, observe close-up to evaluate the extent of egg sac coverage and the presence or absence of new growth on the branch tips. Also observe the whole tree for color and density of foliage and general health. You can download a copy of the Quick Reference Infestation Photo Card (shown below) from the **Facilitators** page of our web site to validate your assessment and show a property owner. Also look for signs of other problems (other insects, fungus, animal damage, soil compaction or excess fill dirt).

Stages of Infestation & Recommendations			
Light Infestation	Moderate Infestation	Heavy Infestation	Decline
			
Few egg sacs on less than half of tree, dense foliage, bright green, new growth in most recent spring	More egg sacs covering 1/2 tree, foliage not as thick as normal, little new growth in most recent spring	Many egg sacs covering most of tree, thinning grayish green foliage, no new growth in most recent spring	Fewer egg sacs, serious defoliation, gray-green color, limb die-back, no new growth
			
Treat with Imidacloprid by soil injection or soil drench. Spring is best, but year-round is OK	Treat with Imidacloprid by soil injection or soil drench. Can add foliar spray on lower branches	Treat with Safari by soil injection or basal trunk spray Feb. 1 through Nov. 15	Treat with Safari by soil injection or basal trunk spray Feb. 1 through Nov. 15

Injector Repair Service

Save Georgia's Hemlocks has developed a repair/refurbishment capability for Kioritz soil injectors and has restored 24 injectors to good working order over the past 9 months. Although replacement parts are no longer available, we have been able to locate suitable substitutes for quite a few parts and have found companies that can remanufacture certain other parts.



The service includes complete disassembly and cleaning, repair or replacement of defective parts as available, reassembly and recalibration. There is no charge except for the cost of parts used and return shipping. So if you have a Kioritz injector that isn't working properly (see Calibration below), please contact us if you would like to have it repaired.

Calibration and Adjustment

A properly working Kioritz soil injector should dispense exactly 2 ounces of fluid for 12 pumps of the handle when the calibration ring is set on the red 5. Here's how to test the calibration.

1. The lower edge of the tall gridded calibration ring should be set on the red 5.
2. With plain water in the tank, pump the handle several times to be sure water squirts out 6 feet in all four directions. If the emitter holes are clogged, clean them carefully with a gimlet, ice pick, or metal paperclip.
3. Place the injector tip into a heavy duty measuring cup and pump the handle smartly 12 times.
 - If you get **exactly 2 ounces** of liquid from 12 pumps, the unit is working properly.
 - If it puts out **more than 2 ounces**, adjust the calibration ring upward and retest.
 - If it puts out **less than 2 ounces**, adjust the calibration ring downward and retest. If you move the calibration ring down as far as it will go and still don't get 2 ounces for 12 pumps, call the Hemlock Help Line for advice on diagnosing the problem.