

Illinois Trees

The Quarterly Publication of the Illinois Arborist Association



Urban & Community Forestry Program Update

by Mike Brunk



Assistance is coming for tree inventories and forest management planning. I am presently awaiting USDA Forest Service approval to initiate a Tree Inventory / Action Plan Grant Program through a partnership with The Morton Arboretum. This grant program provides funding to local government entities for the completion of a full or partial public tree inventory with recommended action items for managing public trees and forests (i.e., establishment, conservation, protection, and maintenance). This grant program would be available for municipalities, tribal governments, forest preserves, park districts, counties, and townships. Municipalities will be required to have tree preservation ordinances/codes as a prerequisite or can be completed as a part of the grant program. These grants require 100% direct or in-kind match, and work resulting from tree inventory action items can be used as in-kind match. Pending my agreement with the USDA Forest Service, the

grant application process will start in mid to late summer of 2020, and the completion date for the work will be Summer 2022. Please visit <http://chicagorti.org/FY20grant> to express your intent to apply or contact Emily Okallau at eokallau@mortonarb.org if you have any questions.

Tree City USA requirements have been relaxed for 2020. Arbor Day events and Arbor Day proclamations will not be required for 2020 TCU approval due to the COVID-19. Also, Tree City USA awards are to be shipped to communities starting in June/July. I have been delayed in getting communities their TCU awards but hope to diligently start the process later in June or early July. All awards are sent directly to me in 4-5 large shipping boxes. I will have to relabel individual packages, package loose materials and ship awards to 200+ communities, utilities and campuses so the process will take me some time. I have secured funding to cover the shipping costs and am presently working out the details with our shipping office and the Arbor Day Foundation. ***Neither COVID nor rain nor heat nor gloom of night stays these couriers from the swift completion of their appointed rounds!***



Table of Contents

Urban & Community Forestry Program Update	1
Executive Director Corner	3
What's new in the Insect World?	4
Are You a Veteran looking to get Certified?	10
Effects of the 2020 Spring Frost	11
In Memory of Cal Williams	13



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Conferences

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Illinois Arborist Association

Mission Statement

"Foster interest, establish standards, exchange professional ideas and pursue scientific research in Arboriculture"

Executive Director Corner

Hello IAA members!

This too shall pass!

Anytime I experienced difficulty as a child, my grandma would say, “this too shall pass”. Back then, it didn’t really help me in the middle of my melt downs, but now as I look back, I know that change is the only constant. How we respond to change speaks volumes about our strength and integrity. How an organization responds to difficult times also speaks volumes about their leaders.

2020 has definitely been a year of changes and it brought with it many difficult decisions. Behind every decision that the IAA board of directors has made, the members safety has been their biggest concern. We have decided to change the IAA Annual Conference into a virtual conference. We also decided to postpone our Tree Climbing Championship until next spring and to forgo our golf outing for 2020 altogether.

We also understand that individuals’ economic ability to participate in training sessions during these times can be limited as well. Our goal is to bring you the necessary training and CEUs while keeping you safe and making it affordable.

As a kid I was also taught to “roll with the punches” and right now that is what we are trying to do here at IAA. As you can imagine, the IAA’s bottom line is suffering at this point. Unfortunately, we did not qualify for the Paycheck Protection Plan (PPP). In an attempt to keep our training going, keep our members safe and keep the office open, we have been creating virtual classes, eLearning courses and online conferences.

At first, I was skeptical about all this online/virtual training, but now I see the many benefits! First off, it saves time and money by not requiring travel. Conference fees cost less because we don’t have to rent a room or pay for food and costly insurance. Second, the footage that we record for some of the training has you up front and center, and for short people like me, that is a great thing! Third, some of the training offers views that most of us can’t see unless we are in a bucket truck or on a rope next to the instructor.

I completely understand that a lot of people don’t want to embrace technology, especially when it comes with way too many passwords, glitches and choppy video. This too shall pass, soon we will build new habits that before long won’t seem so bad. Gosh, I can remember the first time I turned on the internet, it was so slow and cumbersome that I thought who would waste their time! The technology can only get better – right?!

Hopefully, you can participate in our virtual conferences and classes until we are through the pandemic. Until then, stay safe and stay well.

Sincerely,
April Toney

Executive Director

What's New in the Insect World?

by Dr. Fredric Miller

In this newsletter article, I would like to highlight several new exotic pests and also comment on some current plant health issues affecting our woody plants. I will focus on pest and/or disease identification, potential plant health and economic effects, and management options where appropriate.

Spotted Lanternfly (*Lycorma delicatula*). Another new exotic insect to show up here in the U.S. is the spotted lanternfly (*Lycorma delicatula*). The spotted lanternfly (SLF) is native to SLF is native to China, India, Japan, Korea, and Vietnam and first appeared in Pennsylvania in 2018. **To date the SLF has not been found in Illinois.** SLF is considered to be a highly invasive pest and has a host range of over 70 plants species. The lack of natural enemies here in the U.S. also gives this pest high potential for spread (Pfeiffer et al., 2018).

The SLF is a sap-feeding plant hopper with piercing-sucking mouthparts, and an incomplete life cycle (egg, nymph, adult). The wingless nymphs are black with white spots on the body and legs. The last nymphal stage prior to adult emergence has red patches along with white spots. Adult SLFs are approximately 1 inch long and 0.5 inch wide. The legs are black and the abdomen is yellow with broad black bands on the top and bottom. The forewings (front) are light brown to grey with black spots. The hind wings are scarlet red with black spots. At rest the wings are folded "tent-like" over the body. Female SLFs can be identified by a red spot on the end of the abdomen. SLF eggs masses contain 30-50 eggs and the mass is about 1 to 1.5 inches long and 0.5 to 0.75 inches wide, grayish, and covered with a waxy covering giving it a shiny appearance. Older eggs masses resemble seed-like deposits in columns approximately 1 inch long (Pfeiffer et al., 2018).

The SLF is a univoltine (one year life cycle) overwintering as an egg mass. Egg hatch occurs in spring and early summer with four nymphal instars. Adult begin appearing in July and August at which time overwintering eggs are laid through November. Adults die off by late fall.

The young nymphs are generalists and will disperse to a wide range of host plants where they feed on the leaves and branches. They are easy to see at dusk or night as they migrate up and down the trunk or branches of the host plant. During the day, they tend to congregate at the base of the trunk and can be obscured from view by vegetation. Adult SLFs are poor flyers, but good jumpers and tend to move up trees by crawling. Their favorite hosts for feeding and oviposition (egg laying) are Tree of Heaven (TOH) (*Ailanthus altissima*) and grapes (*Vitis vinifera*). Now, before you get too excited, SLF is not a new biological control agent for TOH, sorry! Adult females will lay eggs on any smooth bark trees or surfaces, natural or man-made (i.e. landscape materials, rocks, vehicles, lawn furniture, etc.). Sound familiar, just like gypsy moth and we know how that turned out!

Plant damage occurs due to feeding by both the nymphs and adults by removing plant sap. Heavy populations of SLF can rob the plant of vital nutrients and water which are needed for photosynthesis which can weaken plants and make them more vulnerable to lethal secondary insect pests and pathogens. Sooty mold may also be present due to excessive amounts of honeydew produced from feeding. Heavily infected plants may weep or ooze producing a fermented odor and feeding wounds will leave a grayish to black trail on the trunk which may draw bees, wasps, ants, and other insects.

The SLF has the potential to cause economic damage to grapes, orchard crops, wood

(continued on page 5)

products, and the green industry. Be sure to keep an eye out for this very colorful pest and if you see evidence of the SLF or the insect contact the Illinois Department of Agriculture (IDA).

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The ***Giant Asian Hornet*** (*Vespa mandarinia*) The giant Asian hornet (*Vespa mandarinia*), as its name implies, is one of our newest exotics to reach our shores. Also, known as the sparrow wasp and murder hornets (don't you just love common names), it hales from eastern Asia including parts of Japan, China, India, and Sri Lanka. The Asian giant hornet (AGH) is taxonomically related to the bees, wasps, yellowjackets, and paper wasps (Skvarla, 2020).

In 2019, a colony was found on Vancouver

Island and destroyed. As far as we know, the insect is not known to occur outside the state of Washington and Vancouver Island **and has not been found in Illinois** (Skvarla, 2020). However, I am including this newest invasive in this article because there has been a lot of media coverage and as green industry folks, the public will think they all have the hornet so, I have included additional information on AGH look a likes. Yes, reminds of EAB and the good old days.

The AGH is a social insect with a caste system (i.e. division of labor) which includes a queen, workers, and males just like wasps, bees, and ants. The queen is one of the largest wasps measuring 2 inches in length with a wingspan of 3 inches. The queen is only seen outside when hibernating or in the spring. The workers can be 1.5 inches in length and similar in size to other wasps. They are marked with yellow heads, a black thorax, and yellow and black or brown strip abdomens so they can be easily confused with insects such as the cicada killer (Skvarla, 2020).

Sign up for our Summer and Fall VIRTUAL CONFERENCES

The Summer Virtual Conference will be July 12th - 16th.

The Fall Virtual Conference dates will be announced in July.

What's New in the Insect World? (cont.) (continued from page 5)

Like some yellow jackets and the cicada killer, the AGH tends to build underground nests or may live in hollow tree trunks or roots of trees, but never more than three to six feet above ground. Aerial nests are extremely rare compared to the bald-faced hornet which builds its nest in branches of trees and large shrubs. There are a number of look-alike species of the AGH so it is important that we know the difference and can properly identify them.

The **European hornet** (*Vespa crabro*) is native to Great Britain and is the only “true hornet” found in North America. Not to be confused with the bald-faced hornet (*Dolichovespula maculata*), which taxonomically is not a true hornet. Sorry about the “entomological detour”. The AGH can be identified by the color of its abdomen (banded yellow, black, and brown compared to black anteriorly and yellow posteriorly with rows of black teardrops in European hornets). The thorax of the AGH will be mostly black with a yellow spot between the wings while it is black and reddish brown in European hornets. The AGH also has forward facing eyes, which appears as a larger gap between the rear of the eye and the rear of the head compared to European hornets. I can already hear people saying, “You expect me to get close enough to look at their eyes?!” No, only a deranged entomologist would do that, but if you find a dead one or someone sends you a picture, these features will help with proper ID. Also nest location helps as European hornets tend to build their nests in natural cavities (i.e. hollow trees) and wall voids, and usually no higher than six feet off the ground (Skvarla, 2020).

Another common look-alike is the **eastern cicada killer** (*Sphecius speciosus*). This critter is a native wasp and is similar in size to the AGH. However, their coloration and behavior differ and will help with positive

ID. Cicada killers are common in many landscapes, particularly in landscape beds where the soil is well tilled and well drained, and they may leave a pile of soil at the entrance. Cicada killers are “solitary wasps” which means they live independently and practice “social distancing” compared with the social AGH. Cicada killers emerge from their underground nests in search of cicadas. They “sting” the cicada, carry it back to their nest, and feed it to their carnivorous young. In contrast, AGHs nest underground in wooded or forested areas. Cicada killers differ in appearance from the AGH by having the terminal abdominal segments completely black instead of being banded with yellow and lack any yellow on the head.

There are a number of **yellowjacket** (*Vespula*) species) in North America of which 10 are found in eastern North America where they may build their nests underground or aurally (i.e. under eaves). Yellow jackets are small in size (up to 1/2 inch) which makes their identification rather easy.

The **bald-faced hornet** (*Dolichovespula maculata*), is another common insect that builds its gray paper-like nests up in trees or on larger shrubs. The nests may get as large as a basketball and contain hundreds of individuals. The bald-faced hornet is inky to shiny black with white markings on the face, hence its common name. They are also predators feeding on immature insects.

Like most social wasps, AGH build a new nest every year. Only the overwintering queen survives from year to year and then starts a new colony the following spring feeding on tree sap while building her nest in old abandoned rodent burrows and rearing her young workers. New queens and males are produced in late summer and then these new “reproductives” mate and start new colonies the following spring. (Skvarla, 2020).

What's New in the Insect World? (cont.) (continued from page 6)

Recently, most of the coverage of the AGH has focused on its impact on honeybees which are very important pollinators for many of our agronomic and food crops, and for the production of honey and other related products. As mentioned earlier, the AGH is a predatory wasp just like the cicada killer, yellowjackets, and bald-faced hornets. For reasons not known, the AGH appears to change its preference to honeybees in later summer and early fall. As we see with co-evolved species (i.e. they have “grown up” together), Japanese honeybees have developed a means to protect themselves from the AGH. They basically use a combination of temperature and chemical warfare by forming a ball of honeybees around the hornet, create heat by using their wing muscles (up to 115°F which is lethal to AGH), and raise CO₂ levels killing the hornet. What a remarkable and novel approach! (Skvarla, 2020).

In contrast, our European honeybee (*Apis mellifera*) which is commonly used in commercial honey production and pollination here in the North America has not been exposed to the AGH and thus is not very well-prepared to defend itself or the hive. Typically individual honey bees guard (“guard bees”) the entrance to the hive and when an AGH appears, they try to take it on one on one. Due to the big difference in size, this tactic does not work out too well for the honeybee. Another interesting entomological-AGH factoid is that once the AGH kills the honeybee it makes a “meat ball” out of honeybee parts and takes that back to its nest to feed its young. When three or more hornets attack a hive, this is considered the “slaughter phase” resulting in potentially high honeybee mortality. During the slaughter phase, a group of 20–30 Asian giant hornets can kill 5,000–25,000 honey bees in a few hours. Following the slaughter phase, the hornets enter and occupy the hive

(“occupational phase”) and begin feeding on honeybee larvae and pupae eventually wiping out the hive. However, AGH are not strong fliers only traveling an average of a half mile up to 1.25 miles and never more than 5 miles. Therefore, honeybee hives that have the misfortune of being close to an AGH nest can be vulnerable to attack (Skvarla, 2020).

Like all stinging insects, we need to be aware of the medical importance of these critters. AGHs are not aggressive, but just like other solitary or social insects if they are disturbed or feel threatened they will defend themselves. Be advised, however, that AGH stings can be very painful (not based on personal experience) and there are scientific reports that the stings may cause skin death (necrosis) and hemorrhaging. Severe medical complications usually occur from allergic reactions and organ failure due to a large number of stings much like we see with other venomous insects and spiders. The venom of some of our native wasps is actually more deadly on a per volume basis (LD₅₀=3.5 mg/kg) compared to the AGH with an LD₅₀ of 4.0 mg/kg, but the AGH makes up for it by delivering more venom per sting.

So, anytime you are outside, be aware of your surroundings, be able to recognize venomous insects, give them a wide berth, and if you know you are allergic to wasp and bee stings, be sure to carry the proper medication with you at all times.

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- Skvarla, M.J. 2020. Asian giant hornets. Penn State University Extension. ART – 6383. 8 pp.

Additional Recommended Readings

- **Matsuura, M. 1988.** Ecological study on vespine wasps (Hymenoptera: Vespidae) attacking honeybee colonies. I. Seasonal changes in the frequency of visits

What's New in the Insect World? (cont.) (continued from page 7)

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- **Yanagawa, Y., K. Morita, T. Sugiura, and Y. Okada. 2007.** Cutaneous hemorrhage or necrosis findings after *Vespa mandarinia* (wasp) stings may predict the occurrence of multiple organ injury: A case report and review of literature. *Clinical Toxicology*, 45: 803–807.

Foliar Leaf Diseases: Anthracnose and Apple Scab on Shade Trees

Once again, we have been seeing a lot of anthracnose on a variety of shade tree species including maples, oak, ash, and sycamore. This year is no different. The cool and very wet conditions we had in April and May when the trees were just leafing out provided good conditions for these fungal foliar diseases. With the drier and warmer conditions, disease incidence should begin to decline, but any prior leaf damage will remain. Both of these diseases are caused by fungi

that attack the leaves of host plants and then invade the leaf tissue to cause necrotic areas on the leaf and leaf margins.

Scab is particularly common on crab apples and common apple and forms olive-green blotch-like lesions on the leaf. As the disease progresses, the leaves will turn yellow and may drop off the tree. Heavily infected trees may show premature leaf drop and on older crabapple varieties may be mostly defoliated by mid-to late summer.

With **anthracnose**, the fungus will cause a curling or distortion of the leaf with black necrotic leaf margins. Like scab, there may be premature leaf drop. Additionally, on sycamore, slit-like cankers will form on twigs and branches causing twig and branch dieback and provide a ready source of inoculum the following season. Chronically affected trees will have stunted and gnarly or distorted twigs and branches resembling witches brooming.

While neither of the foliar diseases will kill a tree, they do rob the tree of the ability to make food as the leaf is considered the “food factory” for plants. Chronic leaf damage and premature leaf drop can weaken the tree making it more vulnerable to lethal secondary agents. Planting less susceptible crabapples and sycamores can go a long way in helping reduce the incidence of scab and/or anthracnose. Fungal sprays must be applied on a regular basis in the spring before disease incidence and infection. For severely affected trees, good Plant Health Care (PHC) practices such as watering, mulching, and pruning to increase air circulation and drying of foliage should be employed.

The Mother's Day Freeze/Frost

The mid-May freeze/frost is a good example of an abiotic (non-living) factor that took quite a toll on a number of tree species. I

(continued on page 9)

What's New in the Insect World? (cont.) (continued from page 8)

have noticed a lot of the northern red oaks and shingle oaks in the forest preserves still look pretty rough with thin canopies and undersized leaves. I suspect many of these trees were just leafing out when the cold weather arrived. We saw this same thing occur in late May, 2002 which killed the new candles on pines and spruces and made the oaks like they had been scorched. Yes, the trees will eventually re-leaf, but the leaves will probably be smaller. Additionally, this means the plant will have to dip into its savings account to “pay” for the new leaves. This takes away from food (energy) that could be used for other things such as growth, maintenance, and reproduction. A one-time frost event should not be a problem for healthy trees, but if we move into a hot and dry July and August, this could make it hard for the trees to produce new leaves and reduce their ability to make food for next year. If they go into the fall with a “deficit”, then that can have repercussions for the 2021 growing season. We need to remember that every living organism has an energy budget and plants are no exception. As mentioned previously, good PHC will be important in helping these trees recover and still have a productive growing season.

What is all the “buzzing” about?: Annual and periodical cicadas

No, it is still 2020, not 2024 when we are anticipating the next major periodical cicada emergence in Illinois. So what is going on?

The periodical cicada, as its name implies, emerges on a 13 or 17 year cycle. It has burnt orange wings, bright red eyes, and a jet-black body, and is considerably smaller than the annual cicada. In southern regions the cycle is 13 years and in more northern areas, they emerge after being in the ground for 17 years. There are many broods not only in Illinois, but throughout the eastern U.S. Presently, we are experiencing a partial

emergence of Brood XIII in northern and central Illinois and Brood XIX in southern and central Illinois. These two broods were not supposed to emerge until 2024. So why did some of them emerge in 2020? One possible explanation is that they did not get the memo that it is only 2020, but from a scientific standpoint, we have learned that it is possible for some individuals to emerge earlier than scheduled up to +/- 1 to 4 years which is what may have happened this year. All periodical cicadas spend the vast majority of their life cycle below ground in the soil down to about 2 feet. At their appointed time, they emerge from the soil, shed their exoskeletons (“skins”), and appear as adults. It is possible the warmer winters we have had the past several years may have accelerated their development. The “buzzing” you hear is the males and females “talking” to each other and is unique to each species. No listening in please!

After mating, the female cicada will use her ovipositor (egg-laying structure) to cut slits in small ($\frac{1}{4}$ to $\frac{1}{2}$ inch diameter) branches and twigs to lay her eggs. Upon hatching, the young nymphs drop to the ground and enter the soil for the next 13 or 17 years. By late summer (August), the wounding by the female will cause the twig or branch tip to wither and die. Later this summer you may notice some “flagging” in larger trees, but there is no cause for alarm. You may even find small twigs and branches on the ground, which have broken off. Think of it as “natural pruning”. Research from the 1990 emergence showed that most of our common woody plant species healed over the ovipositional wounds by the next growing season and all were healed over after two growing seasons. However, on younger plants, particularly newly planted orchard or nursery trees, the damage can be significant. Here, there is the potential for plant mortality and the young stems may be riddled with

What's New in the Insect World? (cont.) (continued from page 9)

ovipositional wounds causing the stems to break. We also saw this happen in 1990 on young elm and maple whips in nurseries.

Later this summer, in August, we hear “buzzing” again, but this will be the annual cicada, a completely different species. This cicada is much larger, has black and green markings and a silver underbody. They very rarely cause any damage to woody plants, but they do remind us that summer is winding down and school is right around the corner. You may also see a cicada killer transporting one back to their nest to feed they young. For more information on the periodical cicada, consult <https://www.cicadamania.com> and <https://magicicada.org/magicicada/>.

I hope this information has been helpful. I have tried to focus on a few of the more important issues facing our woody plants. If you see additional problems in the course of your work and monitoring and would like some assistance, please feel free to contact me at fmiller@jjc.edu.

Are you a veteran looking to get certified?

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- Board Certified Master Arborist
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- Certified Arorist Municipal Specialist
- Certified Arborist Utility Specialist
- Certified Tree Worker Aerial Lift Specialist
- ISA Tree Risk Assessment Qualification (TRAQ)

Contact IAA or ISA office for more detail.

Effects of the 2020 Spring Frost

by Lindsay Darling

Many arborists are fielding questions about the effects of this spring's late frost. The Morton Arboretum's Plant Clinic reported that they've received 166 queries (slightly more than 10% of all questions) on the topic between May 11th and June 8th. In that time period, it was their third most common topic, behind plant identification and pesticide application.

While trees can generally withstand a frost soon after they leaf out, they lose that resilience after a few weeks. This means that the species that were damaged varied across the state (depending on which species were in that delicate growth phase). In the north, ginkgo, mulberry, and beech were hit especially hard (Fig. 1). In the south, magnolia, sweetgum, and sycamore were the most damaged. Japanese maple was impacted across the state. The new growth on some evergreens (like yews) were also broadly damaged, but it was mostly cosmetic (Fig. 2). Additionally, younger trees seemed to be more damaged than



established ones.

Figure 1: Frost damage on Ginkgos. The left image shows leaves that were destroyed soon after the frost. The right image shows the crown of a ginkgo that is just starting to leaf out again, but is experiencing substantial distress. Photo credit: Green Extraction Technologies



Figure 2: Frost destroyed the new growth on this yew. Photo credit: Lindsay Darling

A late spring frost can destroy tree leaves. The tree had already expended considerable energy to create those leaves, and with no photosynthetic parts, the tree must utilize more of their reserves to push out a second set of leaves. This renders the trees in a weakened state, and they are more likely to succumb to future stressors. Further, if a tree was already stressed a late frost might kill the tree.

Climate change is altering spring rainfall and temperature. Springs are on average wetter and warmer, and this is impacting vegetation growth (Wang et al. 2011). Plants leaf out according to temperature and length of day (Polgar and Primack 2011). These spring changes trigger some to leaf out earlier than normal, which can leave them vulnerable to a late frost (see Vitasse et al. 2014 for a review). Spring frost damage is on the rise. Augspurger (2013) found that there was a 3% risk of frost damage from 1889-1979, but a 21% risk from 1980-2012. That is, in the modern era

(continued on page 12)

Effects of the 2020 Spring Frost

(continued from page 11)

damaging frosts are projected to occur in one out of five years.

There has been increasing interest in planting more southern species of trees in response to climate change. These trees may be better suited to cope with the hotter, drier summers that we're likely to encounter. However, these same trees may be more susceptible to late frosts (Montwé et al. 2018). In the current event, I've heard multiple reports that many sweetgums in Northern Illinois have been killed back to the roots.

I could not find any articles that tested various methods for rehabilitating frost damaged trees. However, the Morton Arboretum's plant clinic and Purdue's urban forestry specialist offer the following advice:

- Be patient. Most trees will leaf out again in three or four weeks,
- Ensure that the tree is watered,
- Avoid fertilization. Stressed trees generally are not good at uptaking those nutrients, and fertilizer can do more harm than good,
- However, application of soil improvements including biochar, amino acids, and/or micorrhizae can be beneficial. Make sure root systems are not damaged (e.g. waterlogged) before using these treatments.

Finally, if a frost is forecasted, individual trees can be protected with frost fabric. This is not a practical solution on a broad scale or for a large tree, but can protect high-value or especially sensitive individuals. Otherwise, the preventative advice for frost damage is the same as for so many tree issues: plant the right tree in the right place, and healthy trees are better able to overcome stresses than sick ones.

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IAA Virtual Annual Conference

More information coming soon!

In Memory of Cal Williams



Cal Williams, our former Utility Chair (2006-2007) and IAA Past President (2011-2014) passed away on May 7, 2020. Cal was one of the nicest and most genuine person I have ever met. Cal always had a smile and positive demeanor, no matter the situation and was always willing to give a helping hand. He carved a beautiful wooden bench for the TREE Fund Raise Your Hand for Research auction as well as a Artic Fox for the IAA Tree Climbing Championship raffle. Cal was a huge supporter of IAA, ISA and the TREE Fund. He will be greatly missed!

HOPEDALE — Calvin W. Williams, 68, of Hopedale, passed away Thursday (May 7, 2020) at Hopedale Hospital. Calvin was born April 9, 1952 in Bloomington to Robert and Dolores Matthews Williams. They preceded him in death.

Calvin married Bonnie E. Meredith. She survives. Also surviving are one daughter, Jennifer (Terry) Brown of Glasford; one son, James (Christine) Williams of Sachse, Texas; one sister, Edie Gummere of Boise, Idaho;

one brother, Terry (Vicki) Williams of Grand Junction, Colo., and one granddaughter, Kahlan.

Calvin was a Vietnam Marine veteran. He retired from Corn Belt Electric after 40 years as a manager of forestry and safety. Calvin loved his family. He also enjoyed being with his pets and the trees.

Cremation rites will be accorded. Haensel Funeral Home in Minier is assisting the family with arrangements. Memorials may be made to Children and Elders Forrest, 100 E Phoenix Avenue, Normal, IL 61761. Online condolences may be made at www.haenselfuneralhome.com.



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Inside this Issue

Urban & Community Forestry Program Update
What's New in the Insect World?
Are You a Veteran Looking to get Certified?
Effects of the 2020 Spring Frost
In Memory of Cal Williams

