

# CU IN THE WOODS

Clemson Extension Forestry and Wildlife Newsletter



## FLOWERING DOGWOODS – DISEASES AND PESTS

By Sean Bowers

Spring has sprung and the landscape is rapidly greening up. Many trees and other plant species are putting on leaves, blooms, and other springtime features. One showy species that is common across the state is the dogwood. When most people think of the dogwood, they are thinking of the Flowering Dogwood (*Cornus florida*), however, there are several other species of dogwood trees commonly seen in urban landscapes. The Kousa Dogwood (*Cornus kousa*) and the Cornelian Cherry Dogwood (*Cornus mas*) are the most commonly planted, with a large variety of cultivars available of all three species.

Flowering dogwoods are native to South Carolina and are a common shade-tolerant understory tree. They typically grow fifteen to twenty feet in height in full sun but can reach a much greater height of forty feet in the shade. They are found in all areas of the state but prefer moist well-drained soil that is high in organic matter. They are easily identified by their opposite leaf and branch arrangement, scaly bark, and white/red/pink flowers. These trees tend to have both a horizontal and a tiered branching arrangement, more so in the shade than the sun. This gives the overall tree a large crown that fills in well once leaves return in the springtime. Contrary to popular belief, the flowers of the dogwood are not the white petals that you see but are actually located in the center of the petal arrangement. These petals are modified leaves called bracts.

Dogwoods are also beneficial for insects, being a preferred host for giant silk moths and several butterfly species. Bees and other pollinators will use the nectar produced by the flowers in spring.

These trees turn a brilliant reddish-purple in the fall and produce red fruits that are eaten by many bird species, including waxwings, northern cardinals, bluebirds, and juncos. Deer like to browse on the buds and branches of younger dogwood trees in the winter. You can protect your young trees from this browse pressure by installing cages around them.

Since dogwoods are a native tree species, they will establish themselves with no issues if planted correctly. However, there are diseases and insect pests that can cause problems and, in some cases, mortality of dogwood trees.

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## UPCOMING EVENTS

### Fire Ants and Armadillos Online Workshop

Date: April 30, 2020

9:00 am - 11:30 am

Cost \$10

Contact: Parker Johnson

[pdjohns@clermson.edu](mailto:pdjohns@clermson.edu)

<https://www.eventbrite.com/e/2-critters-1-workshop-tickets-102343088934>

### Growing Our Future Annual Meeting

\*Postponed Until Further Notice\*

This workshop was full at the time of postponement. If you have any questions, please contact: Ryan Bean  
[rbean@clermson.edu](mailto:rbean@clermson.edu)

### Women Owning Woodlands Workshop

Date TBD

Cleveland, SC

Contact: Janet Steele

[jmwatt@clermson.edu](mailto:jmwatt@clermson.edu)

**Due to COVID- 19, all of our currently planned workshops are being postponed or moved to an online format. We hope to be able to offer our great in-person workshops again soon.**

Find more events:

[www.clemson.edu/extension/forestry](http://www.clemson.edu/extension/forestry)

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## Flowering Dogwoods – Diseases and Pests cont.

Powdery mildew (*Erysiphe pulchra*) attacks the shoots and leaf surfaces, coating leaves in what looks to be a fine white powder. Warm, dry days and cool, damp nights provide the perfect conditions for the growth and the spread of powdery mildew. Its spores are spread by the wind and can rapidly infest all nearby dogwoods and other plant species. Typically, powdery mildew will show in the late summer resulting in a mild infestation but an appearance earlier in the year can be devastating for a tree and will require fungicide treatment. Several flowering dogwood cultivars have been bred for their resistance, for example, the Appalachian series.

Spot Anthracnose (*Elsinoe corni*) is another fungal disease that affects leaves of the dogwood, causing 1/8-inch brown spots on leaves, shoots, fruits, and flowers. While not particularly damaging on its own, repeat infestations can severely weaken a tree causing slowed growth or even death. Environmental control can be used to ward off this fungus including thinning the crown for increased air movement, clearing litter from around the base, removing infected tissues, and increasing sunlight availability.

Dogwood anthracnose or Discula anthracnose (*Discula destructiva*) is another fungus that affects dogwoods, in a similar, but more severe way than spot anthracnose and requires the same control methods as spot anthracnose. Fungicides such as chlorothalonil, mancozeb, propiconazole, thiophanate-methyl, or certain copper fungicides can be used to treat your tree and have proven to be effective. Be sure to follow all label directions for use, the label is the law!

Dogwood Borer (*Synanthedon scitula*) is an insect pest that lays its eggs in wounds on the tree. The larvae feed on the cambium layer which causes the death of surrounding tissues where they reside. These larvae are the immature form of a clearwing moth that closely resembles a wasp. Branches and leaves that are ridden with pests will prematurely brown and then fall off the tree. Young trees that are infested can be killed in as little as one to two seasons. Keeping trees healthy, fertilized, and free of wounds is the best prevention for dogwood borers. If a tree is already infested, a treatment regimen of permethrin will need to be established.

Dogwood Club-Gall Midge (*Resseliella clavula*) is another insect pest that will lay eggs in dogwoods. Unlike the dogwood borer, this species of midge does not need a wound to attack the tree. Instead, it will attack and feed on the terminal leaflets of dogwoods, resulting in a 1/2- to 1-inch gall that forms on the twig. Normally a light infestation is not a serious issue, but if heavier and repeat infestations occur, it can severely stunt the growth of a tree. Any infected twigs should be cut off and burned to stop the spread of the infestation.

While this is just a sampling of the pests that are known to target dogwoods, other problems with the species have been known to occur. Contact your local extension agent for help with diagnosis and treatment. Clemson HGIC provides a helpful factsheet that details how to take good photographs to assist with diagnosis.

<https://hgic.clemson.edu/how-to-take-good-photos-for-your-extension-agent/>.

References:

Clemson Home and Garden Information Center. (2020). *Dogwood disease and pests* [Fact sheet].

<https://hgic.clemson.edu/factsheet/dogwood-diseases-insect-pests/>

## County Forestry Associations

**Abbeville County  
Forest Landowners Association**  
Contact: Tom Brant  
jbrant@clemson.edu

**Aiken County  
Forestry Association**  
Contact: Stephen Pohlman  
spohlma@clemson.edu

**Anderson Forestry &  
Wildlife Association**  
Contact: Carolyn Dawson  
dawson4@clemson.edu

**Calhoun-Orangeburg  
Forest Landowners Association**  
Contact: Janet Steele  
jm watt@clemson.edu

**Chesterfield County  
Forestry Club**  
Contact: Ryan Bean  
rbean@clemson.edu

**Darlington/Florence  
Landowners Association**  
Contact: TJ Savereno  
asavere@clemson.edu

**Edgefield County  
Forestry Association**  
Contact: Stephen Pohlman  
spohlma@clemson.edu

**Greenville Forestry &  
Wildlife Society**  
Contact: Carolyn Dawson  
dawson4@clemson.edu

**Greenwood County  
Forestry Association**  
Contact: Tom Brant  
jbrant@clemson.edu

**Kershaw County Forest  
Landowner Association**  
Contact: Ryan Bean  
rbean@clemson.edu

**Laurens County Forest  
Landowner Association**  
Contact: Tom Brant  
jbrant@clemson.edu

**Lexington County  
Forestry Association**  
Contact: Janet Steele  
jm watt@clemson.edu

**Lowcountry Landowners Association**  
(Beaufort, Colleton, Hampton, Jasper)  
Contact: Janet Steele  
jm watt@clemson.edu

**McCormick County  
Forestry Association**  
Contact: Tom Brant  
jbrant@clemson.edu

**Newberry County  
Forestry Association**  
Contact: Jeff Fellers  
fellers@clemson.edu

**Salkehatchie Forestry Association**  
(Allendale, Bamberg and Barnwell)  
Contact: Stephen Pohlman  
spohlma@clemson.edu

**Saluda County  
Forestry Association**  
Contact: Stephen Pohlman  
spohlma@clemson.edu

**Sumter County Forest  
Landowner Association**  
Contact: Ryan Bean  
rbean@clemson.edu

**Tri-county Forestry Association**  
(Berkeley, Charleston, Dorchester)  
Contact: Parker Johnson  
pdjohns@clemson.edu

**Williamsburg County  
Forest Landowners Association**  
Contact: Sean Bowers  
sbower3@clemson.edu

Contact the Association nearest to you to find out about upcoming meetings!

# WOMEN CHANGING THE FACE OF FORESTLAND OWNERSHIP

By Janet Steele

As reports of land management issues ranging from fires in Australia to urbanization in the southeast make their way into the news media, an equally impactful issue is facing family-owned forests here in South Carolina. Sixty-three percent of the state's almost 13 million acres of forestland are private, family forests, the majority of which have a man as the primary owner and decision-maker. The average age of more than 80% of these men is fifty-five and over, which will lead to a significant intergenerational land transfer in the next few decades. Since wives are often younger than their husbands and outlive them 70% to 80% of the time, they can be thrust into the role of decision-maker with little to no preparation when a husband passes away. Women may also acquire land through inheritance from other family members, or less commonly by purchasing land. Why does this matter in terms of the ability of women to make land management decisions? Because the timber industry contributes \$21 billion to the economy of South Carolina, and family-owned forests provide a significant portion of this wood fiber. Educating women forest landowners about sustainable forestry can encourage them to maintain their land as family-owned working forests.

Dr. Thomas Straka, Professor in the Forestry and Environmental Conservation Department of Clemson's College of Agriculture, Forestry, and Life Sciences specializes in forest resource management and economics. He explains, "It is all demographics. The Baby Boomers are a huge bulge in the nation's forest owner age distribution and are aging fast. Many owners are couples and women tend to live longer than men. You don't need to be a forest economist to see the result, but it helps." Since women tend to inherit property later in life, getting them involved when they are younger and more physically active will lead to them implementing more forest management practices throughout their ownership. However, most forestry education programs are constructed by male natural resource professionals for primarily male audiences, and there is a shortage of programs targeting female landowners or managers.

To better educate South Carolina's women forest landowners, Clemson Cooperative Extension is partnering with ten other agencies, organizations, and female-owned natural resource management companies to host three pilot workshops based on the successful Women Owning Woodlands (WOW) program. This program was created to address the needs of educating female forest owners and supporting women in forest leadership roles. It is a collaborative project of the National Woodland Owners Association and the US Forest Service. WOW provides an online resource for forest management materials and publications, as well as providing support to individual states organizing their own WOW networks. States have successfully hosted single to multi-day forestry meetings, workshops, field tours, and training, with topics ranging from treatment of invasive species and how to sell timber, to keeping forest land in the family and timber tax.

With funding from a Sustainable Forestry Initiative (SFI) Community Engagement Grant, the first South Carolina Women Owning Woodlands workshop was held in October 2019 in Colleton County and the second in March 2020 in Jasper County. These full-day events included morning sessions to introduce participants to general forestry terms and concepts and guide them to resources they can use to help them manage their property. The afternoon property tours highlighted sustainable forestry, wildlife habitat enhancement, longleaf pine restoration, and conservation practices. Over sixty women participated in the two workshops. A third workshop is being planned for Greenville County.

Before attending the workshops, participants were sent a brief survey to gauge their level of knowledge about forestry and to determine their attitude towards forest ownership. Twenty-five percent of the participants felt they had no knowledge for managing their woodlands, 18% felt slightly knowledgeable, 54% felt moderately knowledgeable, and 3% felt very knowledgeable. None felt significantly knowledgeable. Evaluations after the workshops indicated that participants gained knowledge on all topics presented, with some indicating that they had gained significant knowledge. When asked in another survey question what three things they valued most about owning woodlands, the most common responses were family, legacy, conservation, stewardship, beauty, and wildlife. These responses echo other studies which have found that women forest landowners are concerned about caring for their land and transferring it to family members, and not just producing timber for income.

Following the three pilot workshops, topic-specific workshops such as managing invasive species, handling legal issues of forestland ownership, timber harvesting, and reforestation will be offered throughout the state. For more information on the SC WOW program, contact Area Forestry and Wildlife agent Janet Steele at [jmwatt@clemson.edu](mailto:jmwatt@clemson.edu) or 803-534-6280.

## References:

Butler, Brett J.; Hewes, Jaketon H.; Dickinson, Brenton J.; Andrejczyk, Kyle; Butler, Sarah M.; Markowski-Lindsay, Marla. 2016. USDA Forest Service National Woodland Owner Survey: national, regional, and state statistics for family forest and woodland ownerships with 10+ acres, 2011-2013. Res. Bull. NRS-99. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 39 p <https://doi.org/10.2737/NRS-RB-99>

Markowski-Lindsey, Marla; Catanzaro, Paul; Zimmerer, Rebekah; Kittredge, David; Markowitz, Ezra; Chapman, Daniel A. Northeastern Family Forest Owner Gender Differences in Land-Based Estate Planning and the Role of Self-Efficacy. 2020. Journal of Forestry. Vol. 118, Number 1. Pg. 59-69.

Redmore, Lauren; Tynon, Joanne. Women Owning Woodlands: Understanding Women's Roles in Forest Ownership and Management. 2011. Journal of Forestry. Vol. 109, Number 3. Pg. 255-259. <https://academic.oup.com/jof/article-abstract/109/3/255/4599464>

U.S. Census Bureau. <https://www.census.gov/>

Women Owning Woodlands, <http://www.womenowningwoodlands.net/>

# UPDATING SOUTH CAROLINA STUMPAGE PRICES

By Puskar Khanal

Many landowners have heard the term stumpage price but may not be sure about its meaning. Stumpage price refers to the price a timber buyer will offer landowners for standing trees. In general, sawtimber, which includes larger standing trees with a diameter over 10 inches suitable for making lumber or other structural products, will get a higher price than pulpwood size trees which are smaller standing trees less than 9 inches diameter.

## Sawtimber stumpage price trends:

On average, statewide pine sawtimber prices were \$23.56/ton in the 4th quarter of 2019. Mixed hardwood sawtimber prices were \$24.86/ton on average statewide in this quarter. See figure 1 for a graph of SC sawtimber prices.

## Pulpwood stumpage price trends:

On average, statewide pine pulpwood prices were \$9.36/ton in the 4th quarter of 2019. Mixed hardwood pulpwood prices were \$8.80/ton on average statewide in this quarter. See figure 2 for a graph of SC pulpwood prices.

Several factors impact the stumpage prices for both sawtimber and pulpwood. Those factors include the overall economy and housing market conditions, as well as, local environments such as accessibility, terrain, sale size, tree size and quality, and distance to the nearby mills. Managed timber stands that produce quality trees with large, straight, and clear logs (logs without knots or branches) generally get a higher price. That is because these logs can be used for lumber, veneer, or export products. So, properly managed trees that are in good health and condition would likely be of higher value than unmanaged trees. Trees that are blown down or broken during hurricanes or ice storms also have a residual value, but their value would be somewhat less than standing trees.

One common mistake some landowners make while selling their timber is to accept the first offer, without waiting for other offers. Competitive bidding by timber buyers tends to assure that fair market value is offered for your timber.

For more information, please refer to the SC Forestry Market Quarterly Updates Archive, <https://www.clemson.edu/extension/timber-market/>

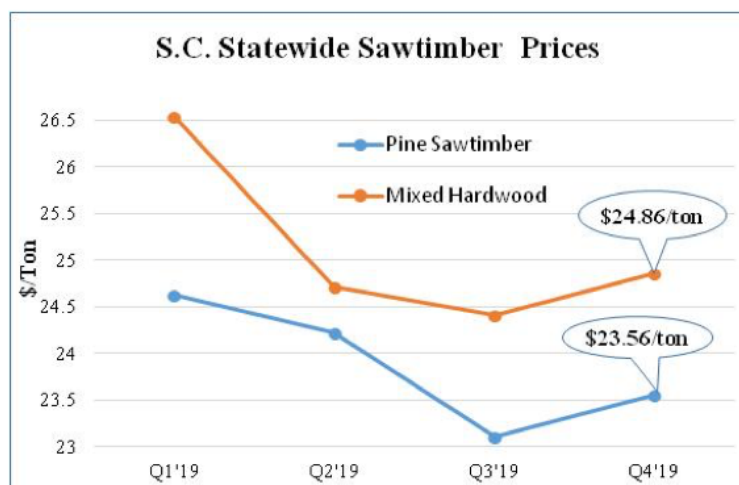


Figure 1. Graph of SC sawtimber prices.

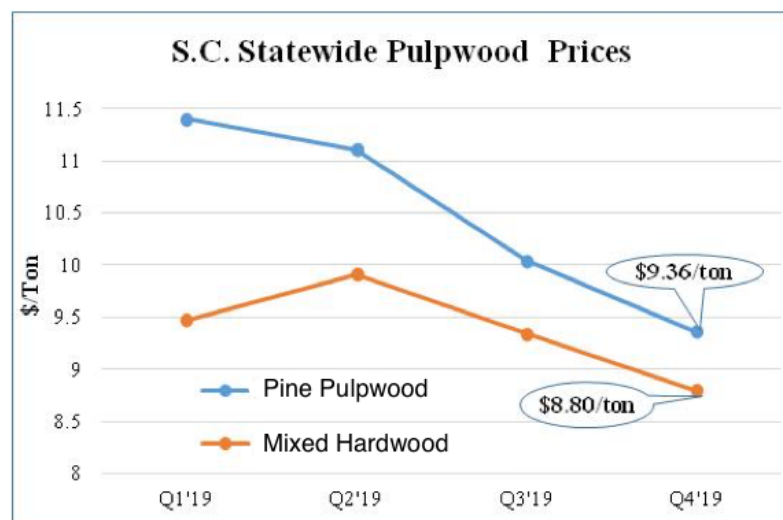


Figure 2. Graph of SC pulpwood prices.

# BEYOND THE BUCK: THE NEWEST CHAPTER IN WILDLIFE PLANTING

By W. Cory Heaton

Wildlife planting is one of the most commonly applied management activities throughout the Southern United States. The primary focus of these plantings has been to provide game species with additional or supplemental high-quality forage. Food plots have continued to grow in popularity and practice among modern game managers. Food plots have typically focused on cool-season grains (wheat, oats, rye, triticale, etc.), warm-season grains (corn and milo), legumes (beans, peas, clovers, etc.), and brassicas (rape, turnip, radishes, etc.). Each year information on new varieties and novel species emerges through the countless outdoors/sportsman informational outlets. Planting food plots has become a huge industry. Seed, herbicides, soil amendments, and equipment used by the wildlife manager were once the same as those used in the agronomy and livestock industries. Today, each of these things is tailor-made and custom fit specifically for the wildlife manager. It only makes sense when you realize the scale of food plots in the South.

Charles Ruth, with the South Carolina Department of Natural Resources, collected data on food plot acreage for the Coastal Plain of South Carolina several years back. What he found was astonishing. In just the Coastal Plain, there were an estimated 182,000 acres of food plots. Compare that with the United States Department of Agriculture's (USDA) numbers for modern agriculture where we saw statewide corn acreage of 350,000 acres, cotton at 300,000 acres, soybeans at 335,000 acres, and peanuts at 65,000 acres in 2019. Keep in mind those numbers are statewide estimates where the food plot acreage is only for the Coastal Plain. This really puts into perspective how big the food plot industry and practices are in South Carolina. It also illustrates that there is a willingness of game managers to invest heavily in wildlife plantings because they see the benefits to game species.

Wildlife plantings are beginning to take on a much different look than the common food plots that we are all familiar with. The most recent USDA Farm Bills have emphasized supplying adequate food and cover resources for native pollinators. Pollinators were long overlooked by land and game managers, as the focus was primarily on deer and turkey. Sure, we noticed the bees in clover, but most likely we did not look any further into it. Today, we are starting to take a closer look at pollinator plantings, and what we are seeing is a big benefit to our wildlife management goals.

Pollinator plantings consist of a wide variety of native annual and perennial flowering plants, legumes, and warm-season grasses. Plant species are selected that have documented pollinator usage, are fit for the specific site conditions, and are available from seed suppliers. Species like ragweed, black-eyed susans, ticktrefoils, coreopsis, coneflowers, asters, native lespedezas, milkweeds, and bluestem grasses commonly show up in pollinator seed mixes. While the species selected for planting were derived from their pollinator value, their benefits extend beyond that. These plantings offer exceptional bugging opportunities for turkey poults and quail chicks. These bugging areas are often limited in typical food plots. Additionally, the pollinator plantings consisting of primarily broadleaf flowering plants offer cover due to their growth characteristics. This cover allows poults and chicks to move freely and safely on the ground under the canopy of the flowering plants. Avian predators have difficulty in locating prey and launching successful attacks in well-established pollinator plantings.

Deer managers are also finding value in pollinator plantings. Deer have long been known to consume a wide variety of plants, but we often overlooked the value of native plants. We focused on the common food plot species that had significant data behind them to illustrate the nutritional value of the crop. When we started looking at the nutritional quality of native plants, the results were shocking. Most of the species planted in pollinator plantings have nutritional values as good as the food plot species, and several of the pollinator species are superior to food plot species in digestibility, crude protein, etc. Additionally, the native plants evolved with the South's environmental conditions. They can tolerate those 100-degree days and intermittent drought periods during the growing season. They can supply sufficient seed production to keep themselves going. Most importantly, the species diversity in those plantings means, regardless of the condition, there will be some forage/browse available to deer.

Pollinator plantings are way bigger than just a food plot for bees and butterflies. Pollinator plantings should be viewed as a utilitarian management activity, meaning they do a lot of good for a lot of species. Depending on your management goals, these plantings may be a perfect fit for your management program and make great additions to your current plantings. They promote diversity and ensure that many wildlife species have food and cover and also make great field borders for existing food plots.

Continued on page 6

## Beyond the Buck: The newest chapter in wildlife planting cont.

Pollinator plantings are the new chapter in wildlife plantings, and I expect that chapter to continue to grow as we learn more about their benefits. Spend a little time online reviewing the information on pollinator plantings. I would encourage you to think about how and where you can incorporate them into your management program. As always, if you need more information or technical assistance please feel free to reach out to me or your local Clemson Extension Agent.

For further information on pollinator plantings see the links below.

Using Farm Bill Programs for Pollinator Conservation  
[https://plants.usda.gov/pollinators/Using\\_Farm\\_Bill\\_Programs\\_for\\_Pollinator\\_Conservation.pdf](https://plants.usda.gov/pollinators/Using_Farm_Bill_Programs_for_Pollinator_Conservation.pdf)

Plants for Pollinators  
[https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/plantsanimals/pollinate/?cid=NRCS143\\_022326](https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/plantsanimals/pollinate/?cid=NRCS143_022326)

Selecting Plants for Pollinators  
<https://www.pollinator.org/PDFs/Guides/SoutheastMixedForestrx5FINAL.pdf>

Pollinator Habitat Planting  
[https://www.fsa.usda.gov/Internet/FSA\\_File/pollinator\\_fact\\_sht.pdf](https://www.fsa.usda.gov/Internet/FSA_File/pollinator_fact_sht.pdf)

## WISTERIA IS IN BLOOM ACROSS SOUTH CAROLINA

By Dave Coyle

Large, showy, purple wisteria flowers are covering trees along roadsides this time of year. While they are pretty, most of what you are seeing is also invasive. Several wisteria species live in South Carolina. American (*Wisteria frutescens*) and Kentucky wisteria (*W. macrostachya*) are native species. They are not all that aggressive in terms of their growth. However, it is an entirely different story with non-native invasive Chinese (*W. sinensis*) and Japanese (*W. floribunda*) wisteria. These are aggressive plants that will grow up and take over old buildings, trees, or anything the vines can grow on. Telling the wisterias apart can be difficult, but there are some ways to do so. Chinese and Japanese wisteria flower during leaf-out, while the native species flower later in the season, after the vines have leafed out as shown in figure 1. Flowers on the invasive species are also almost twice as long as those on natives as shown in figure 2, and native flowers are unscented. Also, seed pods are smooth on the native species and fuzzy on the invasive species. And, they twine differently around whatever they are growing on. Native and Chinese wisteria twine clockwise, while Japanese wisteria twines counterclockwise.

Wisteria's large woody vines can strangle smaller trees, and the weight of the vines, foliage, and flowers can cause tree limbs to break. What is worse though, in forest stands with wisteria the vines can tie the tops of trees together as shown in figure 3. This causes a very dangerous situation for anyone trying to harvest those trees- can you imagine a feller buncher trying to remove trees that are all tethered together at the top? To remove wisteria from a forest stand that will be harvested, it is best to cut the vines a few years prior - but do this in winter. If you cut vines in summer (when they are full of water) they can choke out living trees as they dry out and constrict. To kill wisteria, foliage can be treated with

triclopyr or glyphosate. Cut stems can be treated with triclopyr. When the wisteria is very tall, a combination of cutting the vines and later spraying the regrowth foliage may be effective.



Figure 1. Flowers of the native wisteria formed after leaf out.  
Photo Credit: Dave Coyle, Clemson Extension.



Figure 2. Long flowers of the non-native invasive forms of wisteria.  
Photo Credit: Dave Coyle, Clemson Extension.



Figure 3. Wisteria vines overtaking large trees.  
Photo Credit: Dave Coyle, Clemson Extension.

# CHEMICAL RELEASE OF PLANTED PINES

By Stephen Peairs

In pine plantations, competition for available resources such as water, nutrients, and growing space can slow growth and decrease survival. Often, a chemical release is needed to help remove competing vegetation for your pines to thrive. There are several herbicides approved for forestry use that are available for pine seedling release. The selection of a herbicide (or combination of herbicides) and application rates depends on several factors. Some of the main ones to consider are soil conditions, plant species to be controlled, and pine species being released.

Soil conditions, including texture, pH, and drainage, should all be assessed when selecting a herbicide. Landowners can properly identify the soils on their property by referencing their forest management plan or by visiting the Natural Resources Conservation Service's (NRCS) Web Soil Survey website. If one has difficulty using this site, a visit to the local NRCS office may be beneficial. Soil types will directly determine application rates. A general rule of thumb regarding application rates: the coarser the soil type and less organic matter, the lower the per acre application rate. On the flip side, these soils will likely experience a short time of weed control post application when soil residual herbicides are used. For pine seedling release, soil residual active ingredients are found in several herbicides including metsulfuron (Escort XP®, MSM 60®, and others), sulfometuron (Oust XP®, SFM 75, and others), hexazinone (Velpar® products, Velossa®), picloram (Tordon® products), and imazapyr (Arsenal AC®, Polaris AC®, and others).

Soils having higher pH (alkaline) or low pH (strongly acidic) can inhibit the effectiveness of certain herbicides. Also, soil activity of some herbicides can increase with pH changes, resulting in damage to crop trees. This is often a factor in old agricultural fields, especially those that have been heavily limed. A soil test is recommended before a herbicide application is made on these sites. Standing water or poorly drained soils can reduce herbicide success as well.

Application rates in association with various soil factors are addressed in the herbicide product label. Always reference the herbicide label during the selection process and application process. The label will list use and site restrictions and by the way, the label is the law!

Plant identification is also critical when determining the type of herbicide to utilize. Fortunately, technology has come to the land manager's rescue to ease the "what is that plant" burden. Once you identify the plants you need to control, you can check the herbicide label to ensure the active ingredient can achieve adequate control. If a particular plant is not listed on the label, a different herbicide will be required. A diversity of plant species may require the use of a tank mix consisting of two (perhaps three) herbicides. Be sure to read the label to ensure the differing herbicides are compatible with one another. Mixing non-compatible herbicide can be dangerous and may even render the solution ineffective or reduce the success of vegetation control. Post-planting release rates are typically lower compared to what is utilized for chemical site preparation treatments.

Another thing to address is the pine species being released and its potential sensitivity to a particular active ingredient. This is particularly true when attempting vegetation management within longleaf or slash pine plantations. For example, notice the excerpt taken from the label of Arsenal AC® (figure 1). The application rates for both longleaf and slash pine are lower than the commonly planted loblolly pine. You must read the label completely because the last paragraph in figure 1 specifically addresses a time restriction, lack of surfactant, and lower rates on specific soils for longleaf and slash pine. A costly mistake can be made if one does not adhere to the label.

Use broadcast applications of ARSENAL herbicide APPLICATORS CONCENTRATE for release of the following conifers from hardwood competition:

Crop Species	Rate (fl. oz./Acre)
Loblolly Pine ( <i>Pinus taeda</i> ) <sup>3</sup>	12 - 20
Loblolly X Pitch Hybrid <sup>3</sup>	12 - 20
Virginia Pine ( <i>Pinus virginiana</i> ) <sup>3</sup>	12 - 20
Longleaf Pine ( <i>Pinus palustris</i> )	12 - 16
Pitch Pine ( <i>Pinus rigida</i> )	12 - 16
Shortleaf Pine ( <i>Pinus echinata</i> )	12 - 16
Slash Pine ( <i>Pinus elliottii</i> )	12 - 16
White Pine ( <i>Pinus strobus</i> ) <sup>1</sup>	8 - 16
California Red Fir ( <i>Abies magnifica</i> )	8 - 12
California White Fir ( <i>Abies concolor</i> )	8 - 12
Lodgepole Pine ( <i>Pinus contorta</i> ) <sup>2</sup>	8 - 12
Douglas-Fir ( <i>Pseudotsuga menziesii</i> ) <sup>2</sup>	8 - 12
Jack Pine ( <i>Pinus banksiana</i> ) <sup>2</sup>	6 - 12
Black Spruce ( <i>Picea mariana</i> ) <sup>2</sup>	6 - 12
Red Spruce ( <i>Picea rubens</i> ) <sup>2</sup>	6 - 12
White Spruce ( <i>Picea glauca</i> ) <sup>2</sup>	6 - 12

<sup>1</sup>DO NOT make applications to white pine stands younger than three years old. To minimize potential white pine injury, release treatments should not be made prior to July 15.

<sup>2</sup>Applications should be made after formation of final conifer resting buds in the fall or height growth inhibition may occur.

<sup>3</sup>Mid-rotation release: For broadcast applications below the pine canopy in established stands of loblolly pine, loblolly X pitch hybrid, and Virginia pine use 16-32 oz product per acre. For mid-rotation release of other species use rates listed above.

For slash pine and longleaf pine, broadcast release treatments over the top of pines for the purpose of woody plant control must be made after August 15 and only in stands 2 through 5 years old. For applications over the top of slash pine and longleaf pine, do not add surfactant and use lower labeled rates on sandy soils.

Figure 1. Excerpt taken from the label of Arsenal AC®.

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## Chemical release of planted pines cont.

With late winter/early spring typically being the prime time for seedling release applications (sixty days or more after planting in most cases), the weather is an important factor to consider. High temperature, high humidity, rainfall (absorption time), inversion layers, wind, and freezing temperatures can impact herbicide effectiveness. The product label also addresses potential issues related to weather conditions. This allows the user to understand potential negative impacts due to various weather variables.

If cost is an issue, there are potential cost share funding opportunities from both the NRCS and the South Carolina Forestry Commission. Pine seedling release with a

herbicide application can be an effective tool for controlling competing vegetation. It is important to read the label multiple times and make sure all aspects are understood by the applicator. Understanding the label fully will reduce the potential harm to the pine seedlings and increase the effectiveness of the competing vegetation control. Always remember, the label is the law.

### Resources:

NRCS Web Soil Survey

<https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

### References:

South Carolina Forestry Commission. Forest

Management Facts. [www.state.sc.us/forest/refmgt.htm](http://www.state.sc.us/forest/refmgt.htm)

## POND WEED IDENTIFICATION TIPS

By Janet Steele

As the weather gets better for fishing, the FNR team is receiving more calls about aquatic weeds in ponds. When possible, our forestry and wildlife agents will make these visits in-person to help identify the weeds and make treatment recommendations. But often we can do this through pictures submitted directly to our team. To get a sample of the weed, a stiff toothed garden rake can be used to collect some of the plant (figure 1), reaching as far as possible from the bank to collect just the plant with as little shore debris as possible. Remove the plant from the water (figure 2) and then separate out into individual stems. A picture of the entire plant, as well as a close-up, will help make a proper identification easier. The Clemson Extension Home and Garden Information Center (HGIC) has a series of fact sheets prepared by Dr. Cory Heaton and Dr. Jack Whetstone that address chemical, mechanical, and biological control of aquatic weeds. Controlling aquatic weeds as soon as they become established in a pond will help reduce their spread and negative impacts on a pond's use.

[Clemson HGIC](http://www.hgic.clemson.edu)

[www.hgic.clemson.edu](http://www.hgic.clemson.edu)



Figure 1. Using a stiff toothed rake to reach into the pond.  
Photo Credit: Janet Steele, Clemson Extension.



Figure 2. Pulling the entire plant from the water.  
Photo Credit: Janet Steele, Clemson Extension.

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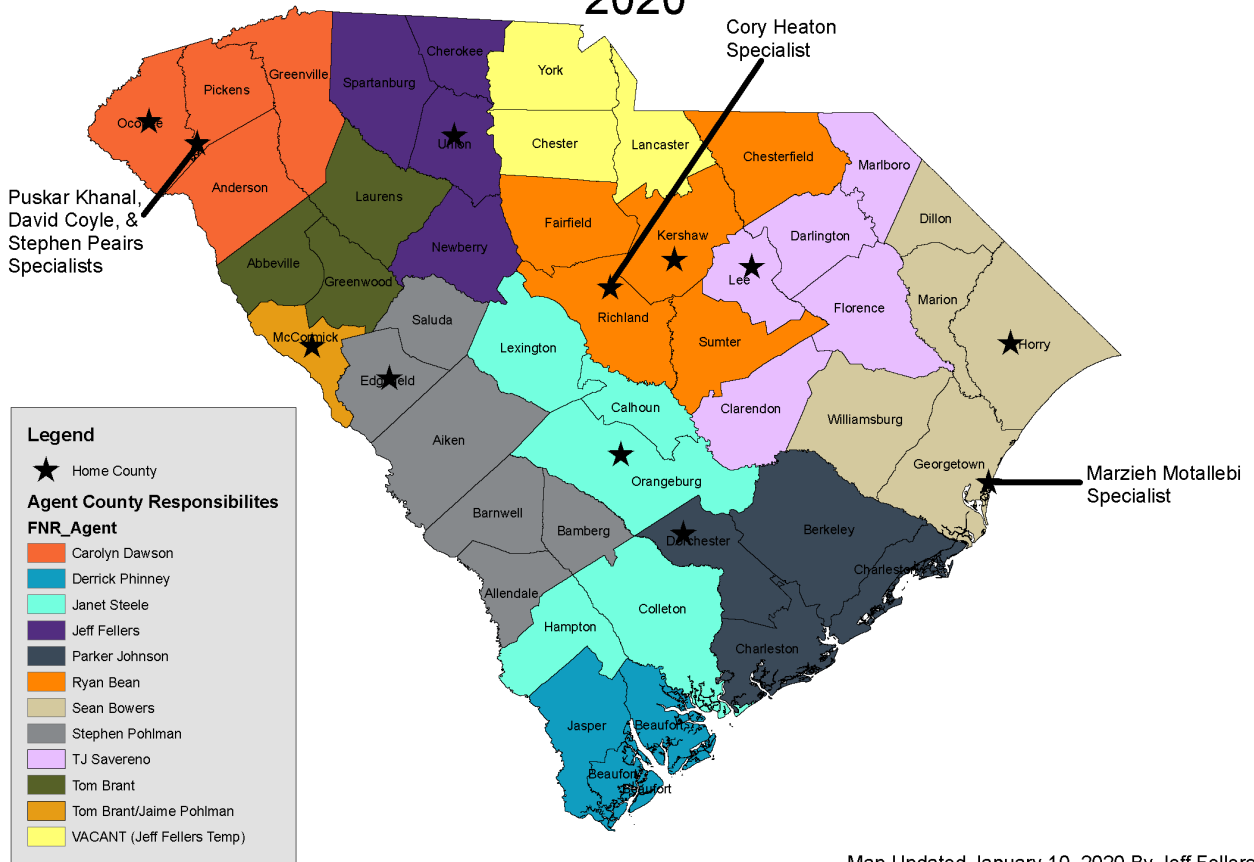
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# Forestry & Wildlife Agent Coverage Across South Carolina 2020



Map Updated January 10, 2020 By Jeff Fellers

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Sean Bowers	sbower3@clermson.edu	Forestry, Hardwood Management, Prescribed Fire
Carolyn Dawson	dawson4@clermson.edu	Forestry, Conservation, Forest Health, Firewise
Jeff Fellers	fellers@clermson.edu	Forestry, Geographic Information Systems
Parker Johnson	pdjohns@clermson.edu	Wildlife Management
Derrick Phinney	dphinne@clermson.edu	Forestry, Biomass, and Bioenergy
Jaime Pohlman	jaime@clermson.edu	Natural Resource Education, 4-H
Stephen Pohlman	spohlma@clermson.edu	Forestry, Thinning, Hardwood Valuation, Food Plots
TJ Savereno	asavere@clermson.edu	Wildlife Management, Native Vegetation, Invasive Species
Janet Steele	jmwatt@clermson.edu	Forestry and Wildlife, Ownership Transition, Longleaf Pine Management
Specialist	Background	
Dave Coyle	Forest Health and Invasive Species Specialist	
Cory Heaton	Wildlife Management Specialist	
Puskar Khanal	Forest Economics Specialist	
Marzieh Motallebi	Ecological Economics and Carbon Credits Specialist	
Stephen Peairs	Forestry, Silviculture, and Hardwood Management Specialist	

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