

Digger

APRIL 2023

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MEET THE LEADER
Angela Bailey **19**

**Diversifying the
tree palette 21**

**The eternal appeal
of oaks 25**

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on shade trees 41**

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THE TREES ISSUE

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An old English word for a woody thicket, spinneys have newfound farming and gardening relevance. **By Mike Darcy**

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Original species still sell well, while new smaller columnar *Quercus* are coming on strong. **By Erica Browne Grivas**

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Research on plant hydraulics helps explain the effect of drought stress on shade trees. **Growing Knowledge by Oregon State University**

ON THE COVER: Ball and burlap trees are ready for planting. PHOTO BY ANNA PAKUTINA

THIS PAGE, LEFT: Angela Bailey stands in a field of monkey puzzle trees at the second-generation, family-run Verna Jean Nursery in Gresham, Oregon. PHOTO COURTESY ANGELA BAILEY

THIS PAGE, RIGHT: A scientist uses a porometer/fluorometer to measure leaf transpiration. COURTESY LLOYD NACKLEY / OREGON STATE UNIVERSITY

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PRESIDENT'S MESSAGE

Democracy in action

Recently, I had the awesome privilege to visit our nation's capital.

Every year, the Oregon Association of Nurseries sends representatives to Washington, D.C. with a specific mission: to represent the growers of Oregon and ensure our concerns and needs are being heard. I was fortunate enough to join President-Elect Amanda Staehely (Columbia Nursery), OAN Government Relations Committee Chairman Mark Bigej (Al's Garden & Home) and OAN Executive Director Jeff Stone for the trip. Over the course of four days, we met with all of Oregon's congressional representatives.

For Jeff Stone, this was not his first visit to D.C. He has been coming to the district for over 25 years and spent many days working with then-U.S. Sen. Bob Packwood, where his political acumen began to take shape. His knowledge of our nation's history and his passion for our country was evident when he became emotional as his eyes fell on the Constitution of the United States in the National Archives. After all of these years, he is still inspired by the principles that formed this great country we are blessed to live in.

It was incredible to see him in action as we began to meet with representatives from Oregon. He knew everyone by name, and likewise, they knew him. It was clear that the relationships he has built over decades of civil service meant something to those he called upon and to those for whose causes he champions.

His influence with the individuals who sit in rooms where ideas and passions can shape policies and law cannot be understated. Like the monuments in D.C., Jeff Stone is a living monument of the amazing things that happen when good people take action and do extraordinary things. We are so very fortunate to have such an incredible advocate for the OAN. Now if only we could get him to eat vegetables, he'd be perfect. Not even \$201 was enough incentive to get him to eat even half a brussels sprout.



Todd Nelson
OAN PRESIDENT

Amanda Staehely, along with her husband Wayne, founded Columbia Nursery in 2005. She brings a unique perspective to the needs of the nursery industry. She is passionate, politically savvy and can articulate clearly what is needed. She is a force that gets things done.

Likewise, it has been awesome to get to know Mark Bigej a little better. He is our OAN Government Relations Committee chair as well as the chief operating officer of Al's Garden & Home. Not only does he understand the needs of nursery growers, but also the complexities that accompany retail operations. He is very sharp and cognizant of our challenges and clear when communicating needed solutions.

These leaders serve tirelessly and unselfishly on our behalf. The time spent with them in D.C. really helped paint a clearer picture in my mind of the extent the OAN will go to maintain momentum as we continuously push forward.

In his famous Gettysburg Address, President Abraham Lincoln, asked those in attendance to "resolve that these [Civil War] dead shall not have died in vain — that this nation, under God, shall have a new birth of freedom — and that government of the people, by the people, for the people, shall not perish from the earth."

My recent experience in D.C. has been humbling and motivating all at once. I was grateful to see our democracy truly in action. Our elected officials truly listened to the concerns, thoughts and ideas of those who they are tasked to represent. The government of the people, elected by the people, listening to those advocating for the people.

With the OAN representing you in Washington, you are in good hands. ☺

Todd Nelson



Calendar

Spread the word about your event!
Email details to calendar@oan.org.



APRIL 3

CCC HORTICULTURE SPRING TERM STARTS

Need irrigation training for yourself or your employees? Trainings in Spanish? Continuing education credits? Clackamas Community College (CCC) Horticulture Department Spring term workshops are open for registration at <https://bit.ly/horteventbrite>. In addition, the CCC Horticulture Department offers a wide range of industry-related credit classes, and credit classes qualify for Landscape Contractor Board continuing education hours (CEH): Every course credit at CCC counts as 10 CEH. (For example, the "Herbaceous Perennials" 3-credit class offering this term earns 30 CEH.) Most classes are one day a week, and some are evenings, making them easy to fit into a working schedule. Spring term credit classes start the week of April 3. Questions? Contact LorettaM@Clackamas.edu.



APRIL 7-8

HORTLANDIA

The Hardy Plant Society of Oregon sponsors this annual plant and art sale at The Westside Commons (formerly the Washington County Fairgrounds), N.E. 34th Ave. and Cornell Road, in Hillsboro, Oregon. Vendors from all over the Northwest will provide the latest plant introductions alongside old favorites. Handmade, one-of-a-kind garden art made from materials like metal, wood, glass, ceramic, fabric and stone will be on display throughout the event. Admission is free! Log on to www.HardyPlantSociety.org for more details.

APRIL 1

19TH ANNUAL SPRING GARDENPALOOZA

More than 30 local nurseries and garden art vendors will showcase their plants, tools and outdoor décor at the 19th annual Spring GardenPalooza. Co-hosts of *Garden Time* (www.GardenTime.tv) — Judy Alleruzzo, perennial and houseplant buyer at **Al's Garden & Home**, and Ryan Seely, sales manager at **Little Prince of Oregon Nursery** (pictured above, right) — will make a special appearance. The 'Palooza will take place from 8 a.m.–3 p.m. on Saturday, April 1 at **Bauman's Farm & Garden**, 12989 Howell Prairie Rd. N.E., Gervais, Oregon. Admission and parking are free! Visit www.GardenPalooza.com for specials, coupons and attendee discounts.

APRIL 14

NEW VARIETIES SHOWCASE — TIER 1 SUBMISSIONS DUE

Growers and breeders — Now's the time to enter your plants to be included in Tier 1 of the New Varieties Showcase, presented by the 2023 Farwest Show. Tier 1 entries will be showcased in the July edition of *Digger* magazine and featured online at www.FarwestShow.com. To be eligible, plants must be new to the marketplace in the last two years, be available from at least one 2023 Farwest Show exhibitor, and represent an improvement over existing selections. Entries are available by calling 503-682-5089 or www.FarwestShow.com/New-Varieties-Showcase-Submissions/.

APRIL 15

HORTICULTURAL SCHOLARSHIP APPLICATIONS DUE

Calling all high school, college or graduate students considering a career as a nursery or landscape professional — April 15 is the last

day to apply for the 20 different scholarships supported by the Oregon nursery industry and offered by the Oregon Nurseries Foundation. Awards range from \$1,000 to \$3,000 and are sponsored by individuals and OAN chapters. Log on to www.OAN.org/ONF or contact OAN Director of Finance and Administration Stephanie Weihrauch at 503-582-2001 or Scholarships@OAN.org for more information.

APRIL 18

TACO TUESDAY

Gold Family Farms of the OAN Sunset Chapter will host a Taco Tuesday lunch, networking and tours from noon to 2 p.m. on Tuesday, April 18. Gold Family Farms is located 11715 S.W. Hillsboro Hwy., Hillsboro, Oregon 97123. All OAN members are welcome! For questions or to RSVP, please contact Chris Robinson at Chris@RobinsonNursery.com.

APRIL 22

EARTH DAY

Earth Day is an annual reminder about the

importance of caring for the environment, and recognizing the role that nurseries play in mitigating the effects of climate change through carbon sequestration, environmental stewardship and community service. Learn more at www.EarthDay.org.

APRIL 29-30

OREGON AG FEST

Ag Fest is the annual fun-filled event where families learn about local agriculture. The two-day event, aimed to help Oregonians better understand where their food, fiber and flora come from, is a unique learning experience. Hands-on exhibits make learning about Oregon's vast agricultural industry educational and entertaining. The ag-stravaganza will take place on the last weekend of April at the Oregon State Fairgrounds, 2330 17th St. N.E., Salem, Oregon. The cost is \$9 each for anyone 13 or older; younger kids get in free. Discounted tickets are available from www.OrAgFest.com and from Wilco stores. ☺

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Northwest News

OAN members and chapters are encouraged to send in relevant news items, such as new hires, new products, acquisitions, honors received and past or upcoming events. Email news@oan.org.

OREGON NURSERY SALES NEAR \$1.4 BILLION FOR 2022

Oregon wholesale and retail nurseries sold nearly \$1.4 billion worth of nursery material in the 2022 calendar year, according to newly released Oregon Department of Agriculture (ODA) licensing data. The exact figure is \$1,369,338,228.00, according to Chris Benemann, manager of the Nursery and Christmas Tree Program at ODA.

The total eclipses the \$1.19 billion in sales ODA reported for the 2020 calendar year. No figure has been released for 2021.

"We're proud that the Oregon nursery and greenhouse industry has such strong forward momentum," Oregon Association of Nurseries Executive Director Jeff Stone said. "Demand for plants remains strong, and Oregon's quality remains high."

The department compiles figures based on reported sales from growers on their license renewal paperwork. Oregon requires growers to maintain a nursery license. The main portion of the revenue supports nursery inspections to help ensure that Oregon plant material is pest-free and that it maintains market access, while most of the rest supports nursery research funding grants with input from OAN members.

Stone added that if needed, the OAN will fight to protect the licensing revenue that growers pay. "We will continue to make sure that Oregon's nursery licensing revenue remains dedicated to the industry and isn't diverted for other purposes," he said.

50TH FARWEST HOTEL REGISTRATION OPENS

Hotel registration is now open for the biggest green industry trade show in the West, the 50th annual Farwest Show and conference, held August 23-25, 2023, at the ★ Oregon Convention



Center (see map).

Hotels 1-4 are within walking distance of the Oregon Convention Center. For attendees wanting a scenic location just outside downtown Portland, the **Holiday Inn-Columbia Riverfront**, located right on the Columbia River 6.5 miles away from the Convention Center, is a great option in Vancouver, Washington, although you will have to shuttle yourself the 20-minute drive to and from the Convention Center.

When booking

through Farwest, attendees and staff receive reduced room rates, free WiFi and complimentary TriMet transit pass when they check in at the hotel. Discounted or free parking is also available.

"A hotel room near the Convention Center is sure to come in handy as we celebrate 50 years of Farwest," events and education manager Heather Cyrus said. "Social events on Wednesday and Thursday night will make nearby lodging the most convenient way to go."

To secure a hotel room within the discounted hotel room block, visit <https://farwestshow.com/hotel-travel/> and follow the reservation instructions provided by each hotel. Attendees





The OAN Government Relations Team at the U.S. Capitol Building in Washington, D.C.. Left to right, OAN President Todd Nelson, OAN Government Relations Committee Chair Mark Bigej, OAN President Elect Amanda Staehely, U.S. Rep. Cliff Bentz (R-Oregon) and OAN Executive Director Jeff Stone. COURTESY JEFF STONE

may also call their hotel of choice to book a room or make their reservation online.

The Farwest Show has not partnered with any travel agency for the 2023 show. Be advised that event organizers have not arranged for any business or individual to be directly contacted for lodging reservations. Visitors are urged to avoid scammers, and do not give credit card information to anyone claiming to be a Farwest travel agent.

OAN DELEGATION VISITS CONGRESSIONAL OFFICES

A delegation of Oregon Association of Nurseries representatives traveled to Washington, D.C. in early March and visited all of Oregon's congressional offices as well as certain federal officials.

OAN President Todd Nelson (**Bountiful Farms**), OAN President Elect Amanda



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Staehely (**Columbia Nursery**) and OAN Government Relations Committee Chairman Mark Bigej (**Al's Garden & Home**) joined OAN Executive Director Jeff Stone for the trip.

The trip's purpose was to discuss OAN's federal priority issues including the next Farm Bill, comprehensive immigration reform, funding for rural infrastructure (water, roads and broadband), recognition and compensation for the carbon sequestration that nursery products provide, and research to combat pest and disease threats.

In nearly all cases the OAN government relations team visited with the senator or representative themselves. A few had votes and one was back in Oregon due to a death in the family.

Sara Neagu-Reed, a lobbyist with national trade group AmericanHort,

joined the Oregon delegation for several meetings, including an important meeting with officials from the USDA Animal and Plant Health Inspection Service (APHIS).

"Our members of Congress made themselves accessible as best they could, and they were good listeners," Nelson said. "Our industry has cultivated a strong reputation for positive dialogue, and it pays off when we can meet our elected officials face to face for open discussion of industry priorities."


In all, it was a productive visit.

"The best advocates for the nursery and greenhouse industry are the growers themselves," Stone said. "The OAN Advocacy Team offers training to help members make the most effective possible case for the green industry, but on this trip, it was the members themselves who knocked it out of the park."

BOXWOOD BLIGHT TEAM TOURS OREGON BOXWOOD NURSERIES

The second annual Boxwood Blight Insight Group (BBIG) meeting was held February 15–16, 2023 at the Oregon State University (OSU) North Willamette Research and Extension Center in Aurora, Oregon. A highlight of the meeting was a full-day tour of Oregon nurseries, with stops at **Bailey Nurseries** in Yamhill, Oregon, **Kraemer's Nursery** in Mt. Angel, Oregon, and **Woodburn Nursery & Azaleas** in Woodburn, Oregon. The tour was organized by BBIG team members representing OSU's College of Agricultural Sciences: Jay Pscheidt, Luisa Santamaria and Jerry Weiland.

BBIG is a team of scientists working together on a project funded by the USDA National Institute of Food and Agriculture




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Boxwood Blight Insight Group, from left to right: Srikanth Kodati, University of Connecticut College of Agriculture; Chuan Hong, Virginia Agricultural Research and Extension Centers; Lynn Batdorf, theboxwoodguy.com; Jill Calabro, Valent U.S.A. LLC; Jerry Weiland, Oregon State University (OSU); Jim LaMondia, Connecticut Agricultural Experiment Station; John Keller, Monrovia; Jennifer Gray, Horticultural Research Institute; Gabriel Sacher, OSU; Laura Gladwin, Everde Growers; Xiaoping Li, OSU; Fred Gouker, USDA-ARS; Andriy Hos, Oregon Department of Agriculture; Mana Ohkura, OSU; Mike Gaines, Scotts Miracle-Gro; Casey Sclar, The Arboretum at Penn State; Jay Pscheidt, OSU. PHOTO COURTESY JAY PSCHIEDT



— Specialty Crop Research Initiative, in partnership with the Horticultural Research Institute and The AmericanHort Foundation. The transdisciplinary team and its partners aim to safeguard boxwood — the nation's No. 1 evergreen ornamental

shrub crop — from blight disease.

“Visiting these large nurseries, including a drive-through of **Monrovia Nursery**, highlighted the size of Oregon's top agricultural commodity and ongoing efforts to produce blight-free boxwood crops,

including strict [best management practices], regular scouting, inventory change from highly susceptible cultivars (e.g., *B. sempervirens* “Suffruticosa”) to more resistant cultivars,” wrote Fred Gouker, BBIG team member, plant breeder and geneticist with the USDA Floral and Nursery Plants Research Unit.

Gouker also noted “these large nurseries all had their own shipping trucks which avoid the potential cross contamination associated with shared shipping loads.”

Announcements

SALINAS, CHAVEZ-DE REMER ASK FOR FARM BILL INPUT

Two of Oregon's newest U.S. representatives, Lori Chavez-DeRemer (R-5th District) and Andrea Salinas (D-6th District), issued a bipartisan joint



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Northwest News



U.S. Rep. Andrea Salinas (D-Oregon) visited with the Oregon Association of Nurseries' Government Relations Committee at Woodburn Nursery & Azaleas Inc. on February 16, 2023. Salinas toured the wholesale nursery in action to learn about the issues and opportunities faced by Oregon's largest agricultural sector. Pictured, left to right: Todd Nelson (Bountiful Farms), Mark Bigej (Al's Garden & Home), Jim Simnitt (Simnitt Nursery), Tyler Meskers (Oregon Flowers Inc.), Amanda Staehely (Columbia Nursery), Leigh Geschwill (F&B Farms), Stephanie Weihrauch (OAN), Salinas, Kyle Fessler (Woodburn Nursery & Azaleas Inc.), Jerry Simnitt (Simnitt Nursery), Jeff Stone (OAN), Chris Robinson (Robinson Nursery) and Noah Fessler (Woodburn Nursery & Azaleas Inc.). PHOTO BY CURT KIPP

statement asking for feedback from Oregonians who will be impacted by the 2023 Farm Bill.

"As Oregon's voices on the Agriculture Committee, it's important for us to hear directly from farmers, fishers, foresters, ranchers, and all those impacted by the Farm Bill so we can ensure their priorities are brought to the policymaking tables here in Washington, D.C.," the two stated in a release.

The Farm Bill includes a wide variety of programs and initiatives, covering everything from commodities and crop insurance to nutrition and trade. "We are proud to represent districts that play a key role in putting food on the table for families across the country and around the world. Agricultural production is the heartbeat of Oregon's rural economy, and we look forward to working hand-in-hand with our producers and hardworking families to craft a beneficial and effective Farm Bill that will set Oregonians up for success over the next five years," Chavez-DeRemer and Salinas stated.

To submit feedback for the 2023 Farm Bill, contact:

- U.S. Rep. Lori Chavez-DeRemer: (202) 225-5711, <https://Chavez-DeRemer.House.gov/Contact>; 621 High St., Oregon City, OR 97045
- U.S. Rep. Andrea Salinas: (202) 225-5643, <https://Salinas>.

House.Gov/Contact; 530 Center St. N.E., Suite 415, Salem, OR 97301

KRAUTMANN'S SEED HRI ADVOCACY FUND

Oregon Nurseries' Hall of Fame members Mark and Jolly Krautmann, owners of **Heritage Seedlings and Liners** in Salem, Oregon, announced a \$25,000 gift to the Horticultural Research Institute (HRI) in January. The gift was made "to honor the many people and relationships they have fostered in what Mark calls the 'craft' of horticulture," HRI said in a statement.



Mark and Jolly Krautmann

The gift was announced at the annual HRI donor recognition banquet, held in January at the Mid-Atlantic Nursery Trade Show in Baltimore. The Krautmanns' gift was designated for the Craig Regelbrugge – Advocates for Horticulture Fund. The Krautmanns challenged others at the banquet to match the gift, and within minutes, another \$15,000 was raised!

The Oregon Association of Nurseries salutes the Krautmanns for their longtime spirit of giving and the many contributions they have made to the nursery industry!

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HOLDEN RETIRES FROM OREGON GARDEN BOARD

Founding member of the **The Oregon Garden**, Verl Holden retired from his position as a member of The Oregon Garden Foundation Board effective Tuesday, February 14.



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Verl Holden poses with a plaque commemorating his unflagging years of service to The Oregon Garden, from breaking ground to serving on the foundation's board.

COURTESY THE OREGON GARDEN FOUNDATION



A horticultural innovator, owner of **Holden Wholesale Growers Inc.**, and member of the Oregon Nurseries' Hall of Fame, Holden first joined The Oregon Garden Foundation Board in 2018. After five years of faithful service, he has chosen to make his position available to a new generation of Oregon Garden advocates.

Holden played an instrumental role in the success of The Oregon Garden dating back to its inception more than 25 years ago. It was Holden who first mowed down the pasture grass on what had previously been an Arabian horse farm, paving the way for the construction of The Oregon Garden. He also used his tractor to dig the larger-than-life outline of the State of Oregon to celebrate The Oregon Garden's groundbreaking in 1997. ☺



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Putting a new spinney on an old word



A spinney is a remnant bit of woodland with an understory of shrubs that provides habitat for native wildlife. PHOTO BY DES BLENKINSOPP / A SPINNEY / CC BY-SA 2.0

DIFFERENT INDUSTRIES have their own language. Often a word, or a combination of words, has a different meaning to those who know the jargon. For example, a television crew might say that they are going to “shoot” in a garden, but the word “shoot” in this connotation does not refer to a gun, but instead relates to taping or filming.

Likewise, in the horticulture world, we have a special language, and its interpretation is often not clear to someone in a differing industry. Two of my favorite common gardening terms are “deadheading” and “sport.” To a gardener, “deadheading” refers to removing old flowers to encourage the development of new flowers and/or to prevent seed formation. To someone outside of the industry, one can only imagine what they might think. A “sport” has nothing to do with an athletic activity but refers to a branch or shoot of a plant that is different from the original plant; a sport is often the source of a new cultivar.

Gardening is a learning experience in many ways, and learning new terminology is just one part of it. Recently we got a suggestion from U.K.-born plantsman Nicholas Staddon at **Everde Growers** to write about “spinneys.” I agreed to take

this topic on, but I had no idea what the word referred to. I knew it would have some reference to the gardening world, but what?

Learning about this new word and its meaning was a challenge and a new learning experience. The experience proved to be more than I had ever imagined.

English usage, French roots

I started by asking tree guru Nancy Buley, communications director for **J. Frank Schmidt & Son Co.**, about the word “spinney,” but she said she had never heard it. Nancy, in turn, asked a co-worker, Guy Meacham, who she referred to as their “resident Brit.”

Meacham said spinneys are common in Britain and are usually a remnant bit of woodland with an understory of shrubs. The shrubs can be a mix of various plants, with one being blackthorn, which is the fruiting shrubby tree that produces sloe gin. Sloe gin is a British liqueur made with gin and sloes, the fruit of *Prunus spinosa*, which is perhaps the same Latin root as spinney.

Regarding spinneys, Nancy said, “I’ve not heard of their being planted deliberately in the U.S., but it seems like a good idea to give spaces of refuge for birds.”



MIKE DARCY

Head “plant nerd,” longtime speaker, host of gardening shows on radio and TV, and author of the In the Garden email newsletter. You can reach Mike or subscribe to his newsletter at ITGMikeDarcy@Comcast.net.

Another local source of tree information is Talon Buchholz, from **Buchholz & Buchholz Nursery** in Gaston, Oregon. Talon also said that “spinney” was a new word to him. He connected with a gardening friend in England, Brian Humphrey, for more information.

“The origin of the word is from the French, as so much of our language is: *Espinoy*, meaning spiny or thorny thicket of woodland,” Humphrey reported back. “Often spinneys become covered in thorny brambles (*Rubus*) and/or blackthorn (*Prunus spinosa*) but some are mixed with primroses and/or bluebells in the spring. Ours is a mixture of overstory of beech (*Fagus sylvatica*) and alien sycamore (*Acer pseudoplatanus*) with some blackthorn and *Taxus baccata* beneath, plus bluebells, primroses and wild garlic in the spring.”

Upon learning that “spinney” is, or was, a commonly used term from ye olde England, I contacted my longtime friend Ralph Woods. Ralph was raised in the farm country of East Anglia in rural England, and I thought he might have direct personal experience with a spinney.

Fortunately, he did have personal knowledge of a spinney and was very familiar with them. Ralph said that the common definition was a small unkempt stand of isolated trees, often a mix of beech, ash, sycamore and elm.

The word “spinney” is derived from Middle English, which developed after the 11th-century Norman Conquest



of England, so the French origin of the term makes sense. (That's how many Francophone words entered the English language.) It connotes prickly or spiny undergrowth. Usually trees of a spinney would be deciduous, not coniferous.

The idea behind a spinney was to provide a habitat for wildlife, often rabbits, pheasants and partridges, which would then provide some hunting for the local squire. Sometimes the word "copse" is used, and the two words, spinney and copse, seem to be used interchangeably.

Where have all the spinneys gone?

Ralph said that a spinney is rare these days, because modern farming practices require large tracts of open field for the giant pieces of equipment that tractors now haul. In the past, a horse-drawn plough or hay cutter could easily be maneuvered

around a small stand of trees.

Ralph wrote, "Sadly, the disappearance of a spinney has contributed to the enormous reduction in wild bird, insect and animal life in the U.K." (I would add the U.S. as well.)

"Now, huge hedge-less and spinney-less fields of glowing rape, golden wheat and demurely drooping heads of barley have replaced the monarchical spinney, so welcoming in days of yore to the local wildlife. Bare, featureless fields now dominate the local landscape where once these proud outcroppings of sentinel spinneys stood."

With the current trend in promoting native plants for pollination and wildlife habitat, perhaps spinneys may again become commonplace. While the average urban gardener would not have the space to support a spinney, there are certainly groups of plants that can be placed together

to provide habitat and maybe be referred to as a small spinney.

A small spinney including dwarf trees and shrubs could be a wonderful way to get children involved in gardening and to learn about the necessity of providing habitat for our native bees and other insects. Add a small pool or source for water and the possibilities of attracting even more wildlife become substantially increased.


A small spinney could become a focal point in a garden center. Installing some signage with the word "spinney" is bound to attract attention because gardeners would be unfamiliar with the term — and as we all know, gardeners like to know it all.

Once they understand what the word means and how a small spinney could be created in an urban garden, I bet gardeners will latch on to this new word and run with the idea. ☺



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MEET THE LEADER

The voices of Oregon's nursery industry



TELL US ABOUT YOURSELF

My husband, Larry, and I own and operate **Verna Jean Nursery**. I am proud to be a fourth-generation farmer and second-generation OAN member.

After my mom's passing in 2005, Larry and I, along with our two daughters, Katie and Abbigayle, returned to the nursery. Today, we farm on the same land my great-grandparents farmed and where my mom started her nursery in 1967.

We continue to grow Japanese maples, monkey puzzle trees and other specialty nursery stock in the Gresham area.

WHAT'S YOUR GUIDING PRINCIPLE?

"You can't change the ocean or the weather, no matter how hard you try, so it's best to learn how to sail in all conditions."

BEST BUSINESS DECISION?

Stick to the old but explore the new. When we returned to the nursery, we made the decision to continue to grow inventory

Angela Bailey

Co-owner

Verna Jean Nursery

President

Oregon Farm Bureau

OAN Member

Since 2005

2009-2011

*Past president of the
Mt. Hood Chapter*

2011-Present

*Government Relations
Committee Member*

that the nursery was known for. My mom was known for growing Japanese maples and monkey puzzle trees. Although both are quite complicated and labor intensive, we felt that it was wise to continue with her model. Through the years, we have added and expanded into more options and different varieties, but our core has remained the same and that has worked well for us.

HARDEST BUSINESS DECISION?

Do we keep going or call it quits? Through the lean years, when things are really hard, I am sure this is a question that many business owners ask themselves. I am glad we have persevered.

MOST SIGNIFICANT MENTOR?

I am fortunate to have had many people in my life who have encouraged me, believed in me and mentored me along the way. My mother, Verna Jean Hale, was a strong woman and from her I learned what it means to be a strong woman. When I was young, it



MEET THE LEADER ANGELA BAILEY

never occurred to me the significance of Verna Jean Nursery being her dream and her business. Though my dad helped at the nursery, he had an off-farm job, so the primary responsibility of the day-to-day operations was hers for 38 years (1967–2005). When I think about that now, I realize what an accomplishment that was. Though we own and operate the nursery now, I think of all the ways her influence still impacts the way we operate today.

Likewise, I am fortunate to have Barry Bushue (Bushue's Family Farm) as a mentor, neighbor and dear friend. For nearly 20 years, through the good and bad of life and leadership, Barry has been present with a listening ear, wise counsel and a good dose of healthy perspective. I am deeply grateful for all of the ways that he has invested in me and my leadership journey.

BEST BUSINESS ADVICE?

Be you, not them. In life and in business, you must do what works for you.

WHAT DO YOU LOVE MOST ABOUT THE NURSERY INDUSTRY?

Without a doubt, the people. In the spring of 2005, my mother, Verna Jean Hale, passed away suddenly. We were stunned and didn't really know what to do or how best to move forward. In the days, weeks and months after her passing, the outpouring of care and offers of help that we received from the industry were extraordinary. It was then that we knew that this was an industry we wanted to be a part of.

GREATEST CHALLENGE?

Not enough time in the day. Eighteen years of balancing the nursery, off-farm jobs, our family and leadership roles have made our lives full and busy. Now, as Oregon Farm Bureau president, my schedule is more demanding than ever. I am thankful for the great partnership I have with my very supportive husband, who picks up a lot of slack at the nursery and at home.

WHAT ARE YOU MOST PROUD OF?

The small role that I have been privileged to play in advocating for an industry that I love.

WHAT ARE THE MOST CRITICAL CHALLENGES FACING THE INDUSTRY TODAY??

Oregon politics. We live in a state where our leadership simply doesn't value agriculture or small business. The legislature feels like a runaway train and the regulatory agencies are promulgating rules at an alarming rate. The effects of legislative action and regulatory burden are making it harder and harder to survive. We are fortunate to have several farmers/ranchers currently serving in the Oregon Legislature, but we need more.

Labor. At the national level we are in desperate need of immigration reform.

Also, the economy and cost of doing business. ☹

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Diversifying the tree palette

In response to climate change, growers have become more conscientious about offering a mix of natives and clonal selections

BY EMILY LINDBLOM

The spectrum of modern tree selections ranges from Pink Flair® Flowering Cherry to Box Red oak, Urban Pinnacle oak, *Acer rubrum*, American Dream oak with summer green foliage and fall golden color.

WHEN HE BEGAN WORKING in urban forestry more than 20 years ago, Scott Altenhoff and his team would refer to a list of trees known to be strong performers in different conditions.

“We would call them ‘bombproof’ because they could withstand tough urban soils, drought stress, hot, bright conditions in full sun and such,” said Altenhoff, manager of Oregon Department of Forestry’s Urban and Community Forestry Assistance Program. “We could usually always count on them to perform well.”

Over the last five to 10 years, many of those historically go-to trees have continued working in

urban environments, but many have shown signs of struggling due to the effects of climate change.

“Red maples used to be considered bombproof — they were trees that did well no matter where they were placed — but we’re seeing them suffer from drought stress and heat,” Altenhoff said. “So, we recognize we need to be flexible and expand and have more diverse palettes. We need to shift and adapt the choices and align them with what we know are likely to be harsher environmental conditions.”

Some of these conditions include extended drought, weather extremes, smaller growing spaces, diseases and pathogens. A



DIVERSIFYING THE TREE PALETTE

warming climate could mean invasive pests such as the emerald ash borer and spotted lanternfly would be able to have a wider geographic range for longer seasons. If an oak borer got a foothold in Oregon, it could potentially decimate the state's oak population, according to Altenhoff.

“Right now, we have a lot of choices of cultivars and trees and species to select from, but the trees the major nurseries are growing tend to be clonal,” Altenhoff said. “The genetic diversity is just not there, so if a pest or pathogen were to appear on the scene that liked red maples, that could really take its toll.”

Diversity rules

Nancy Buley, director of communications for **J. Frank Schmidt & Son Co.** (JFS) in Boring, Oregon, said the best way to tackle this challenge is by making sure palettes include a diverse set of adaptable trees, and genetic diversity within those tree species.

JFS grows trees for wholesale growers, garden centers and landscape construction firms across the U.S. and Canada. Buley, who has worked there since 1994, said the goal is to grow trees that will thrive now and survive for the next 50–100 years in urban environments.

“The climate is becoming much warmer. We’re already seeing tremendous temperature extremes, both hot and cold, as the climate warms,” Buley said. “It’s challenging to select and grow trees for such an unpredictable climate pattern.”

In the last 30 years, Buley has seen a trend of customers in cities selecting native trees. “People want native trees for a lot of good reasons, but the problem with native trees is that cities are not native habitats — they’re urban heat islands and come with all sorts of challenges,” Buley said.

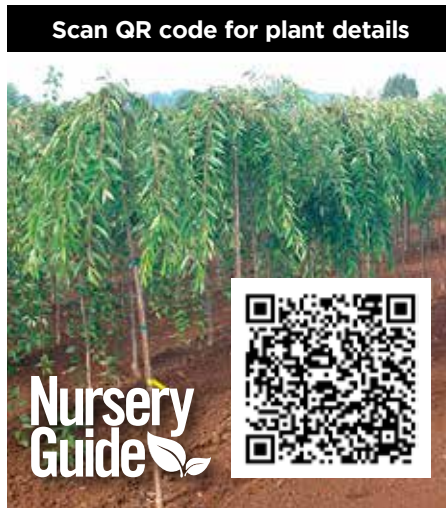
So about four decades ago, a plant breeder at JFS, Keith Warren, set out to select high performers out of native plant seedlings that would have a better chance at city living. Out of the millions of seedlings the company grows each year, Warren selected some to test for suitability for growing and adapting to urban conditions. Over 10 to 15 years, he observed how they

Top: Lollipop crabapple tops out at 8 feet tall and comes topped with a ball of foliage and flowers that attract pollinators. Bottom left and right: Proven Winners® Spring Glory® (*Amelanchier canadensis*) flowers bright white on a compact frame, 12 feet tall and 6–8 feet wide. COURTESY UPSHOOT LLC





Pink Snow Showers™ weeping cherry (*Prunus × subhirtella* 'Pisnshzam) COURTESY UPSHOOT LLC



performed to find ones that particularly stood out for being resistant to heat, mildew or other conditions.

Out of the bur oaks tested, one that stood out was named the Urban Pinnacle® oak (*Quercus macrocarpa* 'JFS-KW3' PP22815), and out of the swamp white oaks, the American Dream® oak (*Q. bicolor* 'JFS-KW12' PP23632) performed the best. Over the next 15 to 25 years, JFS produced new cultivars from cutting or grafting those high-performing selections.

Buley noted another cultivar, Redpointe® red maple (*Acer rubrum* 'Frank Jr. PP16769'), that has a broad range where it could perform better in both hot and cold climates.

"Redpointe handles heat and drought better than most red maples but also does better in cold climates," Buley said, adding it does well in Chicago and New Mexico alike. "It also handles higher pH levels. Most red maples perform best in more acidic soil, but this one is also adaptable to higher pH soils."

Another is a flowering cherry called Pink Flair® (*Prunus sargentii* 'JFS-KW58') that is adaptable from North Dakota to California, South Carolina to New England.

Some of the company's customers are experimenting with planting warm-climate trees further north, but Buley said the problem with that is the potential for cold snaps that can kill trees that would otherwise do well the rest of the year.

"Planning a diverse palette of genus and species is really important," Buley said. "I don't agree with people who advocate for only native trees. We need to introduce trees that can handle our changing climate and native trees that are adaptable."

Maria Zampini, owner of **UpShoot Horticultural Marketing** in Fairport Harbor, Ohio, helps spread the word about trees that do especially well in urban conditions. In her role as Tree Program Manager of the Proven Winners® ColorChoice® Flowering Trees branded plant line tree by **Spring Meadow Nursery**, Zampini helps bring to market the species that are known for their beauty, disease resistance, retail appeal, multi-season interest and ability to fit in a landscape. "It's my job to source genetics and work with growers," she said.

Zampini started her career working at her family's wholesale nursery, and she said she's noticed a shift in focus

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DIVERSIFYING THE TREE PALETTE

on climate change over the years. “When I started in the industry we talked about hardiness zones, but now it’s also about the heat tolerance zone. Asking about drought and heat tolerance has become a natural part of that conversation, not an after-thought,” she said.

Growers look for many things in a tree, including disease and pest resistance, and the ability to fit in smaller spaces, but the durability to handle the effects of climate change has also become a core factor.

“I think there’s a lot of opportunity to connect with urban foresters,” Zampini said. “We can sell what’s fast and easy, but we need to look for what’s going to survive and thrive in the long term.”

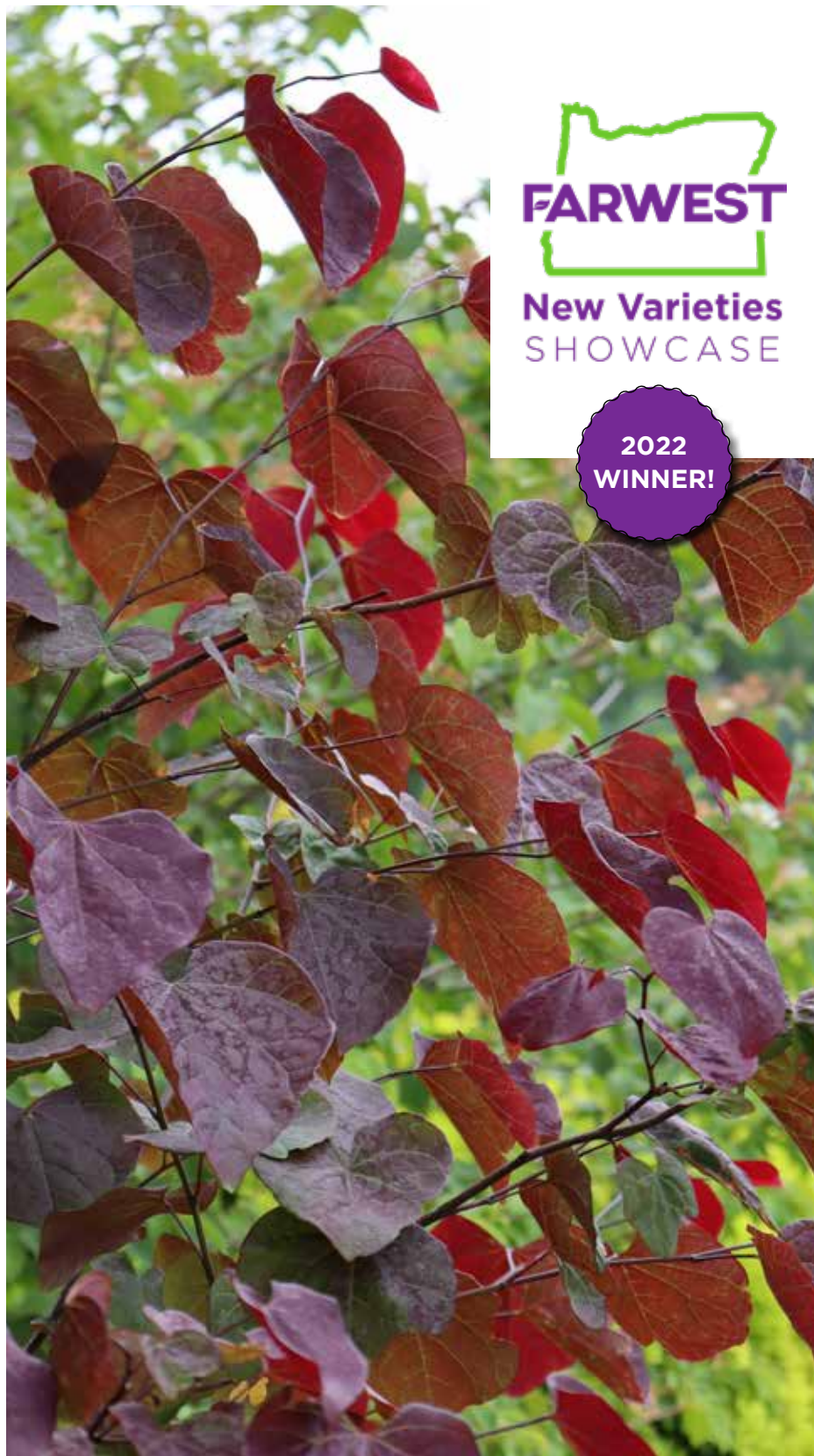
From what she’s seen, customers from homeowners to cities and businesses are more conscientious about climate change and thinking about diversity in their landscapes. “There are some growers who want to carry the tried and true because that’s what their customers will ask for and what sells, but I think there are people who make it their differentiation strategy by having that diverse palette to offer,” Zampini said.

Regionality is also important to consider. “A lot of nurseries, especially in the Oregon area, are not just growing and selling for the Pacific Northwest, they’re shipping all across the country, so they need to know what those clients are asking for. ‘Are there regional things I as a grower need to be offering that work for those areas?’”

Alan Heinrich, vice president of horticulture at **Everde Growers**, said his company grows a diverse palette across multiple states. He said carbon sequestration is important for customers to consider when choosing trees for their landscapes because it can help reduce the amount of carbon dioxide in the air.

“Of all the plants, trees are likely the ones that sequester the most carbon,” Heinrich said, adding that oaks in particular are some of the best at sequestration due to their broad canopy, dense wood and long lifespans. “There are all kinds of benefits to trees: they’re a great place for wildlife, helpful for erosion control, and

Proven Winners ColorChoice cultivar Midnight Express redbud (*Cercis canadensis* ‘RNI-RCC3’ PP34213) earned a People’s Choice Award in the New Varieties Showcase at the 2022 Farwest Show. Introduced by Upshoot LLC, Midnight Express is a striking ornamental tree with velvety-looking, deep burgundy foliage which stands out amongst other dark leaved redbuds with its upright habit, straight trunk, fast growth and pink pea-shaped spring blooms. This tree will reach heights of 20–30 feet and widths of 10–20 feet and is hardy in USDA zones 5–9. COURTESY UPSHOOT LLC



Skinny Fit® ginkgo (*Ginkgo biloba* 'Menhir' PP24226) fits in tight confines and is a strikingly colorful tree that glows dark green in summer and bright, golden-yellow in autumn. COURTESY UPSHOOT LLC



one thing you don't hear a lot about are trees sequestering carbon."

Heinrich also noted it's important that cities continue to plant trees in parking lots and road medians to decrease the heat going back up into the air.

Bailey Nurseries of St. Paul, Minnesota, breeds and grows trees in Minnesota, Illinois, Oregon and Washington. James Kuon, sales manager at Bailey Nurseries, has been seeing a slow, subtle shift of warmer zone trees moving north.

"Crepe myrtle [*Lagerstroemia* spp.], for example, has seen a slow, somewhat steady creep north over five to 10 years," Kuon said. "This would occur naturally as trees experience a change in their environment, so we're trying to monitor that. When you work closely with the environment you see these changes more acutely than someone who is not in agriculture or horticulture."

Kuon said his company works closely with sales representatives across the country and Canada to monitor what the market is requesting, so Bailey Nurseries can adjust accordingly. The company sells across the market from retailers and growers



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Temple of Bloom® Seven-Son Flower (*Heptacodium miconioides*) has a compact habit, growing only 8-12 feet, but produces big clusters of fragrant flowers that are highly attractive to pollinators. COURTESY UPSHOOT LLC

to landscape contractors, municipalities and botanical gardens. “We see customers asking for native species and trying to diversify their plant palette,” he said.

Collaboration is key

Taking an interdisciplinary approach will be fundamental for the future of urban forestry, according to Altenhoff of the Oregon Department of Forestry.

“Those in state government like me or at the city level need to be talking with growers and landscape architects and civil engineers, the people spacing out trees in urban areas,” Altenhoff said. “We also need to do a better job of reaching out to nontraditional partners. Real estate brokers and agents could play a major role in educating people about the value of trees and building resilience.”

Altenhoff added there needs to be



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more education and engagement with stakeholders who have not traditionally been part of the conversation, including architects, transportation planners and urban planners.

“Right now, there’s a major opportunity,” Altenhoff said, referring to the Inflation Reduction Act of 2022, which set aside \$1.5 billion for tree planting. “We’re scrambling to put that [money] to the highest use and set up a network of growers and contractors and people in my position for how to make this work for everyone and build the capacity.”

Altenhoff said challenges include the loss of trees due to forest fires as well as supply chain and labor force issues within nurseries. “We need more trees, and trees that can withstand the stressors we’re seeing,” Altenhoff said. “We need to keep communicating and working together as a total industry.” ☺

Emily Lindblom is an Oregon-based freelance journalist covering business, environmental and agricultural news. She has a background in community reporting and a master’s degree in multimedia journalism. Visit her website at EmilyLindblom.com or reach her at Emily@EmilyLindblom.com.



The eternal appeal of oaks

Original species have stood the test of time and still sell well, while new smaller columnar hybrids of *Quercus* are coming on strong

BY ERICA BROWNE GRIVAS

Top left and center: Kindred Spirit® oak (*Quercus* × *warei* 'Nadler' PP17604) is a fast-growing variety with a very narrow, columnar habit, and glossy, dark green foliage that turns bright red-orange in fall.

COURTESY SURFACE NURSERY / J. FRANK SCHMIDT & SON CO.

In McMinnville, Tennessee, the landmark “Birthing Tree” is a historic white oak (*Quercus alba*) with a crown over 130 feet wide.

COURTESY FACEBOOK

WITH FOSSILS FOUND as old as 55 million years, oaks have long been entwined with human history since it began. Because of their longevity and massive proportions, the largest oak species in the *Fagaceae* family enjoy a near-epic reputation. Sayings like “strong as an oak” and “from tiny acorns mighty trees grow” hint at our awe for them.

Oaks remain popular across the United States today, from coast to coast.

In McMinnville, Tennessee, a grand white oak (*Quercus alba*) has welcomed passersby for over 250 years. A landmark since 2000, the so-named “Birthing Tree” stands 81 feet tall and has a crown over 130 feet wide. The tree gained stature as a meeting place and shelter for settlers on the Old Kentucky Trail. Some pioneer women, while waiting for their companions and supplies or a storm to clear, gave birth to the next generation under its branches. In 2015, American Heritage Trees collected seeds from the Birthing Tree to perpetuate its next generations.

Across the country, in McMinnville, Oregon, is **Robinson Nursery**. Adam McClanahan, Robinson’s national field representative, marvels how trees — oaks in particular — connect us to history.

“A mature white oak is my favorite oak overall,” McClanahan said. “My family knows I will slam on the brakes while driving if I see a mature white or bur oak.” He said he visits a *Q. alba* specimen, probably 50 feet tall and wide, that graces a local cemetery, where he thinks about what the tree may have seen in its time. “Wow, if that tree could talk, I’d sit and listen.”

McClanahan also cited the environmental benefits oaks offer when building natural landscapes. Native plants attract pollinators and need the filtered shade oaks provide. Oaks offer humans, birds, deer, squirrels and other wildlife protection and nourishment.

“Not only in woodlands for wildlife, larger oaks provide coverage for the understory plants that need to grow,” he said.

But what’s the appeal of oaks for nurseries? “Just the diversity in sizes and shapes, as well as where they can be used,” McClanahan said. “It’s a broad family of trees that can carry over from multiple soils and climates.”

Species appeal

“There are species applicable to every climate in North America,” said Marc McCormack, chief sales officer at **Bailey**



THE ETERNAL APPEAL OF OAKS

Nurseries. Some hybrids eventually edge out the species in popularity, but oak species have staying power.

“I was counting the oaks we grow at Bailey, and it’s something like 20 or 25 total,” McCormack said. “But what I find interesting, unlike some other trees, like maples and ash, we still sell 12 different species.”

While there have been cultivars introduced from *Q. alba* or *Q. rubra*, market interest in true species remains solid. Bailey Nurseries grows oaks from bare root to 25-gallon containers and 2-inch calipers. “We rarely have years we don’t sell through our oak inventory,” McCormack said.

“Oak is the backdrop of the landscape,” said Alan Heinrich, vice president of horticulture for **Everde Growers** in Orange, California. With 15 farms across the country, Everde carries 11 oak species.

“Our most popular is the holly oak,” Heinrich said. “That’s the one landscapers’ plant.” Other bestsellers include *Q.*

This white oak stands in a cemetery near McMinnville, Oregon, and is a favorite of Adam McClanahan, national field representative at Robinson Nursery. “Wow, if that tree could talk, I’d sit and listen,” he said. COURTESY ADAM MCLANAHAN



Keith Warren describes the 23-year timeline for the selection, trial and introduction of Streetspire® oak, one of more than 40 cultivars he developed during his 40-year career at JFS. COURTESY J. FRANK SCHMIDT & SON CO.



American Dream® oak (*Quercus bicolor* 'JFS-KW12' PP23632)

COURTESY J. FRANK SCHMIDT & SON CO.

First launched in 1797, the USS Constitution (below, left) has a hull made of three layers of oak: white oak for the exterior horizontal planking, live oak for the vertical framing, and white oak again for the interior horizontal planking. Oak is not only rot resistant, it is also extremely strong. Today, the U.S. Navy owns a 53,000-acre forest of oak trees in Indiana, specifically designated for making renovations to the antique naval ship. Rhett Steele, forester of Naval Facilities, and Dwight Demilt, ship restorer foreman of Naval History and Heritage, assess a white oak tree designated for use in repairing the USS Constitution. PHOTOS COURTESY OF U.S. NAVY



agrifolia, the California live oak; *Q. suber*, the famed “cork oak” which offers rugged bark and thrives in cool, wet springs and hot summers; and *Q. virginiana*, the live oak, an excellent hardwood that supplied the nation’s first publicly owned timber for Navy ships.

Oaks for smaller homes

Most people don’t have the space for a 50-foot-wide tree in their yard. But now oaks come in columnar, upright, compact varieties that have become wildly popular along with the market for smaller-profile trees and shrubs.

“The fastigate ones, we cannot grow enough,” McClanahan said. With homeowners living in smaller lots these days, he said, “They are looking for something in that family of plants, but they don’t have room for a plant that gets 40 feet wide.”

Wholesale grower **J. Frank Schmidt & Son Co.** has bred several columnar oak hybrids. “Oaks are very promiscuous,” said Guy Meacham, product development manager. “There are thousands of oak hybrids from species from different parts of the world that hybridize together, and you get very good plants from those. Even

though you’re starting with parents from different parts of the world, they often bring the best character of both.”

When making selections, Meacham said, breeders look for new and improved benefits. In the case of Crimson Spire™ oak (*Q. × bimundorum* ‘Crimschmidt’), the original hybrid of North American *Q. alba* and European *Q. robur* bred by J. Frank Schmidt (JFS), its benefit was having foliage “that looks good all year long in the city rather than getting covered in mildew.”

Launched nearly 20 years ago, Crimson Spire has become a classic. Its leaves turn rusty red in fall and hold color well; they also stay on the tree until new ones emerge in spring, which is great for screening.

For those who prefer a clean look in winter, there’s Streetspire® oak (*Q. × bimundorum* ‘JFS-KW1QX’), which drops its leaves in fall. Both Crimson Spire and Streetspire average about 45–50 feet high and spread about 15 feet.

The narrowest of JFS’s English white oak hybrids, the aptly named Skinny Genes® (*Q. × bimundorum* ‘JFS-KW2QX’ PP 24442), has glossy green leaves that persist after turning yellow in fall.



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“The bicolor, swamp white oaks are very useful in the industry, especially for planting in cities,” Meacham said. He recommended American® Dream for a traditional spreading silhouette at 50 feet high by 40 feet wide or Beacon® oak for an upright form that only reaches 15 feet wide.

For even tighter spaces, Kindred Spirit® hybrid oak (*Quercus* × *warei* ‘Nadler’ PP17604) is a cross between upright English and swamp white oak that grows 35 feet tall and only 6 feet across. “That is my hands-down favorite,” McClanahan said. “I like the color, size, everything about it. It has a nice orange fall color because of the pin oak parentage.” Depending on the alkalinity of the soil, he said, it can vary in color from maroon to more yellow.

No pressure

When it comes to pest and disease pressure, oaks are relatively easy on the grower compared to some species.



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- American Dream® oak (*Quercus bicolor* ‘JFS-KW12’ PP23632)
- *Acer rubrum* ‘Frank Jr. PP16769’
- Pink Flair® (*Prunus sargentii* ‘JFS-KW58’)
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- Streetspire® oak (*Quercus* × *bimundorum* ‘JFS-KW1QX’)
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Crimson Spire™ oak (*Quercus* × *bimundorum* ‘Crimschmidt’)

COURTESY J. FRANK SCHMIDT & SON CO.





Beacon® oak
(*Quercus bicolor*
'Bonnie and Mike')

COURTESY
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"*Quercus* is pretty bulletproof," Heinrich said. "Some oaks are susceptible to twig or leaf galls, but with proper timing of our insecticide we can control those. There are some borers, like clear ring borers, from time to time but we scout for them."

However, oaks do have a habit of growing sideways. "One of the problems with oaks is their root systems," said Shawn Nerison, vice president of **Surface Nursery**. "They like to run a big taproot, and it's not uncommon for the root to take off sideways right off the bat and that's not good."

To keep the plant's roots growing on the straight and narrow, Nerison said each plant seed is grown in a tube in the greenhouse for its first year, and that's not all. "After they've been underground a year, we undercut them." In this process, a machine cuts off about a third of the root system to encourage more fibrous roots for easier transplanting.

Sometimes, a tree will grow its own, unbalanced way. "Some can be difficult to get to branch evenly so we do special pruning," Nerison said.

Everde also takes preventative measures to head off issues. "We take a lot of pride in our root pruning process,"



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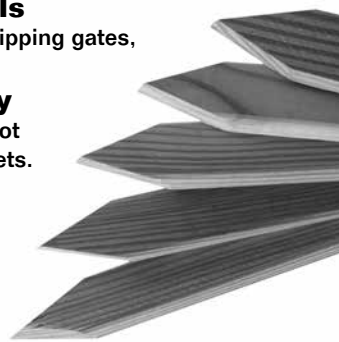
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THE ETERNAL APPEAL OF OAKS

Heinrich said. Any kinked or spiraling roots are pruned before planting in a new container.

“It might take 30 to 50 years to girdle the trunk, possibly felling the tree,” Heinrich said, “but it’s an investment in the future for our customers.”

With all their upright trees, Everde prunes the canopies for strong dominant leaders, eliminating weak branch angles, ultimately saving time and money in pruning for the first 5–10 years.

Next wave oaks

Looking ahead, Meacham at JFS foresees strong interest in two areas. “There’s probably more interest in fastigate or narrow oak trees just because of space limitation, and there’s more interest in people in having more regional oaks, that are perhaps more specifically suited to their areas.”

For example, Gambel oak (*Q. gambelii*) and its hybrids are on the upswing, Meacham said, especially in places like the Southwest, where “it’s adapted to that xeric climate.”

There may also be a greater need for dry-adapted trees elsewhere overall. “We will be looking for tougher oaks that don’t require as much water and have good ornamental qualities,” Meacham said.

For the moment, Everde is sticking with species — but that may change. “We are looking at our own selections and own genetics, but we haven’t rolled it out yet,” Heinrich said.

Bailey Nurseries works with several breeders to create improved crosses and varieties with marketable attributes like compact form. “We’re always looking for disease resistance,” McCormack said. Others are selected for improved fall color, cold hardiness and alkaline tolerance.

“Certainly, if we could ask for anything it’s that they could grow a little faster,” McCormack joked. “But it’s certainly fun to watch them grow in popularity.” ©



Do you know students pursuing careers as Nursery or Landscape Professionals?

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The tribulations of big trees

Growing bigger trees that will flourish in a changing climate takes a long-game approach

BY JON BELL

Bailey Nurseries grows scores of acres of seedlings in layer beds and bare root trees that are ready to sell in two to four years. Many of the trees sold go to other growers, who then plant the trees in fields or containers for a few more years to get them up to a larger size.

COURTESY BAILEY NURSERIES

FOR DECADES, tree-lined streets across the country — largely in the Southeast — would erupt in the bright white blossoms of Callery pear trees (*Pyrus calleryana*) every spring. Affordable, fast-growing and easily shipped, the trees had become the darlings of landscapers, municipalities and others, which also meant they were a favorite of those who could grow them — nurseries.

But in recent years, the Callery — known also by its most popular cultivar, the Bradford (*P.c.* ‘Bradford’) — has lost its luster. Its blossoms are pretty, but they stink to high heaven, drawing comparison to rotting fish and other smelly things. Their stems and branches sprout thorns — sometimes up to 3 inches long! — which have been known to puncture tires.

Native to Asia, the Callery is aggressively invasive, spreading into native forests, choking off other plants and snapping up vital resources for itself.

As a result, cities across the country started

to quickly shift away from Callery pears, cutting them down and replacing them with less invasive and native species. Many cities have ordinances prohibiting the planting of Callery pears, and even whole states have taken action. South Carolina will implement a ban on new Bradford pear sales in October 2024, and starting this year, it is illegal to sell or plant any variety of Callery pear anywhere in Ohio.

The move away from Callery pears has been a good one for cities and fans of native trees. For nurseries that grow Callery pears, however, the hit has been a little harder. Some growers have found themselves with trees still in their fields that they are either selling at a loss or not selling at all. They’ve scrambled to shift to other species, but it takes years to grow trees to a size that most municipalities are after.

“It went from being a nice tree to one you can’t plant anywhere,” said Tyler Kuenzi, general manager at **Kuenzi Turf and Nursery** in Salem, Oregon. “It was too quick of a



THE TRIBULATIONS OF BIG TREES

change and too big of an area. The market has had to readjust and resize. We're still dealing with excess inventory from that."

The Callery pear episode is just one of the kinds of trials and tribulations that nurseries who grow larger trees face. There's also the potential for pests and diseases, fluctuations in consumer demand, potentially over- or under-planting, ever-present labor shortages and more. But with the right planning, some diversification, maybe a dash of genetics and a commitment to the long game, successfully growing and selling the bigger trees that the market is demanding these days is entirely possible.

"We are always tracking what our sales are, what are customers are saying they want and readjusting our planting," Kuenzi said. "There always ends up being a time lag, because we know these trees won't come out of the ground for years. But as long as there is not a dramatic drop-off — like we had with the pears — most stuff ebbs and flows, which helps minimize the risk."

Roots in the industry

Carlton Davidson has been in the tree business for more than two decades, first with Carlton Plants in Dayton, Oregon, for 20 years and for more than four years with **Bailey Nurseries**, which acquired Carlton Plants in 2018. He said the nursery specializes in trees that are desirable and suitable for a range of landscapes, including municipalities, golf courses, parks and residential homes.

The nursery self-propagates as much as possible by growing scores of acres of seedlings in layer beds, and grows bare root trees that are ready to sell in two, three and four years. Many of the trees sold go to other growers, who then plant the trees in fields or containers for a few more years to get them up to a larger size.

Bailey also has a container division, which in recent years has moved away from smaller sizes and toward a focus on 10- and 20-gallon containers to help simplify inventory.

"We are moving away from the smaller



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Previous page: Kuenzi Turf & Nursery grows Heritage® river birch (*Betula nigra* 'Cully') trees in fabric grow bags, which help increase plant health and reduce losses when the trees are transplanted. A North American native, Heritage river birch trees can grow 50-80 feet tall and are extremely resistant to the bronze birch borer, which has been responsible for killing many silver birch trees in the Pacific Northwest. COURTESY KUENZTI TURF & NURSERY

ones to help manage our product line for profitability,” Davidson said. “It also makes life simpler, and customers appreciate and understand that. I don’t think we’ve missed a beat in making that adjustment. The container tree market has been strong and continues to see a lot of demand.”

He said Bailey’s teams, including sales and marketing, breeding and a “new variety group,” are always working to single in on the best-quality trees that can resist pests and diseases.

The nursery also works with research universities, such as Oregon State University, in developing or refining new trees. One underway at present is a triploid (seedless) variety of the Norway maple, a popular tree that has been spreading invasively in the northeastern U.S. A seedless variety would help contain its spread.

At Kuenzi, the nursery grows bare

root liners and all kinds of trees, from shade and flowering to fruit, nut and specimen. Kuenzi said the nursery grows many of its liners in fabric grow bags, which help increase plant health and reduce losses when the trees are transplanted. Shade and flowering trees are also grown in the bags, which also allows them to be dug up anytime throughout the year. And the nursery is starting to move some of its Japanese maples into grow bags as well.

Kuenzi said the nursery always tries to stay on top of what kinds of trees the market is seeking, even though that can be tough given the long growing cycles. He said Kuenzi is able to minimize some risk by transplanting from one size to the next. For example, if the nursery plants 5,000 seedlings of a certain variety in greenhouses, but then sees the market shifting, it may only plant 3,000 of them in the next size up.

Mixing it up

Offering a diversity of sizes as well as species is also key to growing trees successfully. At any given time, Kuenzi will have 50 to 75 different varieties of shade trees. The nursery has also been adding some conifers to its mix.

“We’re just adding more to continue to diversify,” Kuenzi said.

Diversity is big at Bailey, too. In addition to growing hundreds of cultivars, the nursery also has a number of different growing operations in Oregon — in Yamhill County, on Sauvie Island and in Sunnyside — as well as in Washington and Minnesota. These diverse growing locations help spread out risk and minimize losses versus planting everything in a single place.

Evolving with the times is key, too.

Davidson said Bailey is constantly monitoring cultivars’ performance



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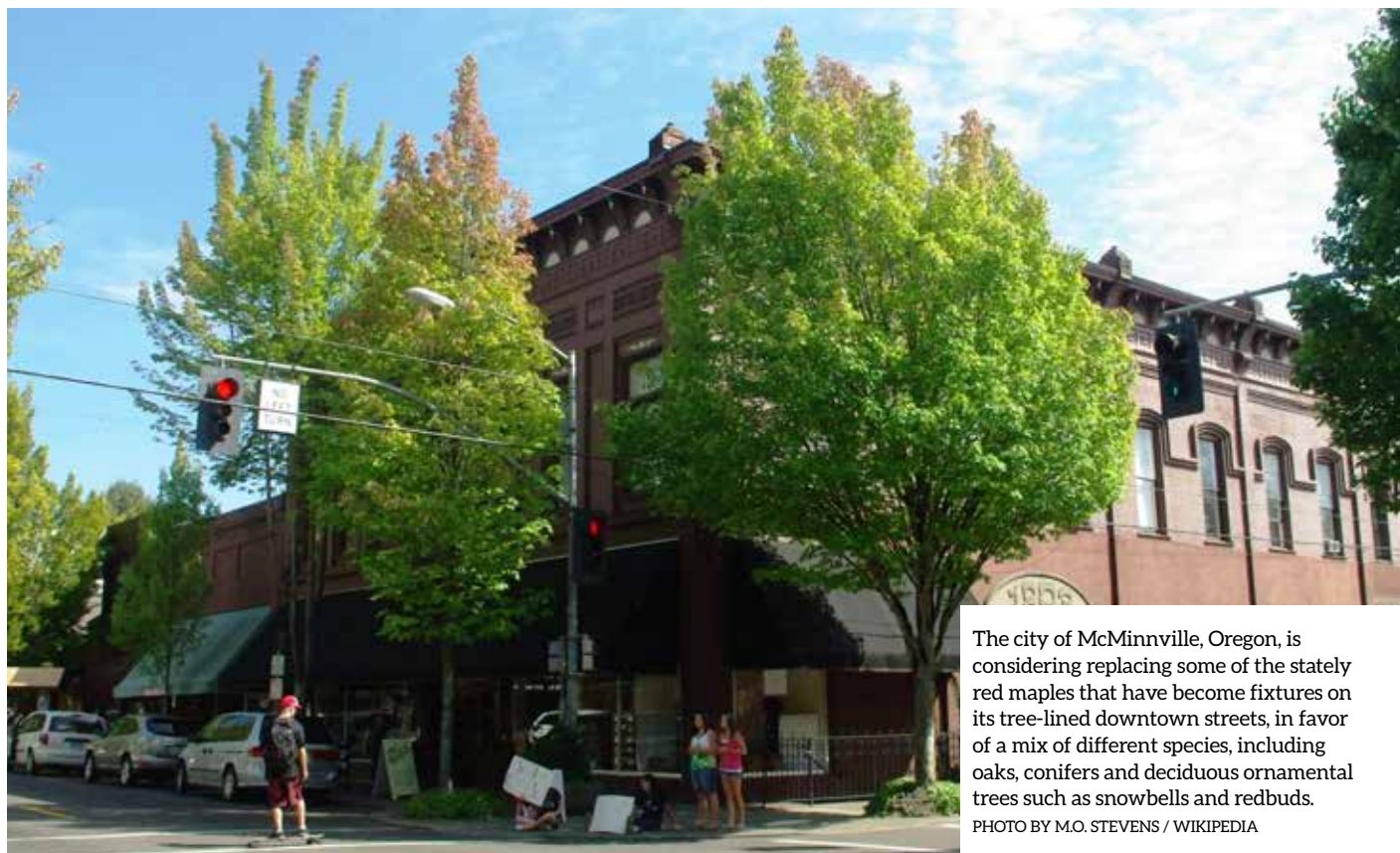
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The city of McMinnville, Oregon, is considering replacing some of the stately red maples that have become fixtures on its tree-lined downtown streets, in favor of a mix of different species, including oaks, conifers and deciduous ornamental trees such as snowbells and redbuds.

PHOTO BY M.O. STEVENS / WIKIPEDIA

and refining as necessary. For example, when the Emerald ash borer started to become a threat, Bailey took action.

“Emerald ash borer was devastating,” he said. “It pretty much wiped out the ash market in the industry. We knew this would not be good for future sales, so we reduced our numbers and then eliminated that plant altogether. It’s no different than people having to change in their own lives like with their technology. What might have been good a decade ago may not be applicable anymore. You have to move forward.”

Similarly, Davidson points to the infamous ice storm of February 2021 and the devastation it wrought on the Willamette Valley’s stock of birch trees. The white-barked trees may be pleasing aesthetically, but their inability to survive an ice storm may not make them the best bet for a nursery’s future sales.

“Learning your lesson from what happens in the environment can help you decide which varieties to grow,” Davidson said.

Branching out

Part of Davidson’s perspective on tree selection comes from his work on the city of McMinnville’s landscape review committee. Part of that committee’s task is to try

and ensure the city is planting the best possible tree varieties for today and tomorrow.

Nurseries often grow their trees with municipalities in mind and pay close attention to ordinances regarding variety, tree size and other factors. But Scott Altenhoff, manager of the Oregon Department of Forestry’s Urban and Community Forestry Program, thinks there’s more that could be done to help cities get the trees they want and nurseries to spread some of the risk in growing them.

“Why don’t we have better connections or established supply chains for municipalities?” he said. “It’s because, historically, municipalities and governments have not done the best job to work with nurseries to share risk. It’s all been on nurseries to see what the bestsellers are.”

Altenhoff said he first began looking into the issue after a symposium about 10 years ago focused on the role of trees in mitigating some of the effects of climate change.

He said there was a disconnect between growers, landscapers, urban foresters, cities and other stakeholders on everything from what kind of trees were most suitable to how to acquire them. What he’s been trying to do is foster communication and create at least an informal network for sharing infor-

mation and resources.

Altenhoff pointed to a similar effort that’s happened in Chicago, where the city has been investing in the tree canopy, in part by entering into contract growing arrangements that include down payments to growers so they’re not having to bear all the risk. The Windy City has multiple tree-planting initiatives, including Our Roots Chicago and the Chicago Region Trees Initiative.

While the conversations are just in the early stages, Altenhoff said he’s confident that cities, nurseries, landscapers and others can work together to come up with an effective approach for growing, planting — and even paying for — the right kinds of trees across Oregon and, in turn, improving urban forests and tree canopies.

“The real challenge is promoting the understanding of how to get better trees everywhere they’re needed,” Altenhoff said. “Once that’s clear, we can make it happen. We just need to be strategic about where we are and where we want to be.” ©

Jon Bell is an Oregon freelance journalist who writes about everything from Mt. Hood and craft beer to real estate and the great outdoors. His website is www.JBellInk.com.

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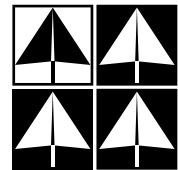
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Going with the flow

Research on plant hydraulics helps explain the effect of drought stress on shade trees

BY SADIE KELLER, REBECCA SHERIDAN, SCOUT DAHMS-MAY, CAROLYN SCAGEL AND LLOYD NACKLEY



When do trees need to be irrigated? Researchers at the North Willamette Research and Extension Center, Nackley Lab Nursery at Oregon State University use a pressure chamber (PMS Instruments Co., Albany, Oregon) to measure plant water potential in Red Sunset maple trees (*Acer rubrum* 'franksred'). COURTESY OREGON STATE UNIVERSITY

IN OREGON'S Willamette Valley, the heart of the nursery industry, rainfall is scarce during the summer and humidity is low. The plant stress resulting from the low soil moisture, high heat and low relative humidity has been exacerbated in recent years by the increasing frequency of heatwaves.

Drought and heat stress can scorch the canopies and reduce growth, leading to decreased plant quality and economic losses for shade tree growers. Scientists at the Oregon State University Horticulture Department and the USDA-ARS are using principles of plant hydraulic physiology to understand how shade trees respond to drought and heatwaves.

Plant hydraulic physiology is a way to understand how water moves through plants, similar to the way blood moves through the body. Imagine a big drinking straw running from the roots to the leaves of a plant; this is similar to the stem, which is made up of thousands of tiny tubes that help the plant pull water from the roots to the leaves. The water evaporates from the leaves, goes into the air, and the plant soaks up more water to repeat the cycle, ensuring the plant gets all the water and nutrients it needs.

The water moving through the plant is under tension, and as air and soil dry, the tension increases. If the tension becomes too great during drought, air bubbles can form inside the plant, causing cavitation. This can reduce growth and eventually lead to branch death and plant death.

To prevent hydraulic failure, the



plant closes its stomata to reduce water loss in transpiration, but this also decreases the carbon available for photosynthesis. The plant must balance between drying out and a lack of carbon dioxide during drought.

Understanding individual drought response

The pattern of water use varies by species, cultivar, environmental and soil conditions, and drought severity, and is the result of coordination and tradeoffs among various traits along the entire water transport pathway. Seedlings and saplings have different drought responses than mature plants, so understanding the specific responses of nursery-grown plants is important for irrigation management.

The current research at Oregon State University focuses on the hydraulic responses of Red Sunset® maple (*Acer rubrum* 'Franksred') and red oak (*Quercus rubra*) to increased xylem tension. Red maple is a deciduous tree native to the eastern half of North America and is known for its fall foliage. Red oak is also a deciduous tree native to the eastern and central United States and easily recognizable by its deeply lobed leaves.

These species were selected because they are important to the Oregon shade tree industry and have evolved in environments different from the Willamette Valley. Their native ranges are hot and humid in the summer, whereas Oregon is hot and dry.

The water balance of a plant is crucial for its survival and growth. Too little water can cause wilting and death, while too much water can lead to anaerobic soil conditions and root rot. The water content of a plant's cells, leaves and tissues can change in response to environmental conditions, and the water balance is regulated by the movement of water into and out of the plant in response to changes in the environment, such as temperature, light intensity or water availability.

The water balance responses of plants are described on a hydric continuum from isohydric to anisohydric. Isohydric plants maintain a constant water potential across



At the U.S. Department of Agriculture Agricultural Research Service (USDA-ARS) Horticultural Crops Research Lab in Corvallis, Oregon, scientists (above) use cavitation chambers to simulate drought stress in tree stems brought from the field. Below, scientists built an experimental plant hydraulics apparatus to measure the flow of water through a cut stem. The rate of flow can inform researchers about how well the plant can move water to support growth and metabolism. COURTESY OREGON STATE UNIVERSITY



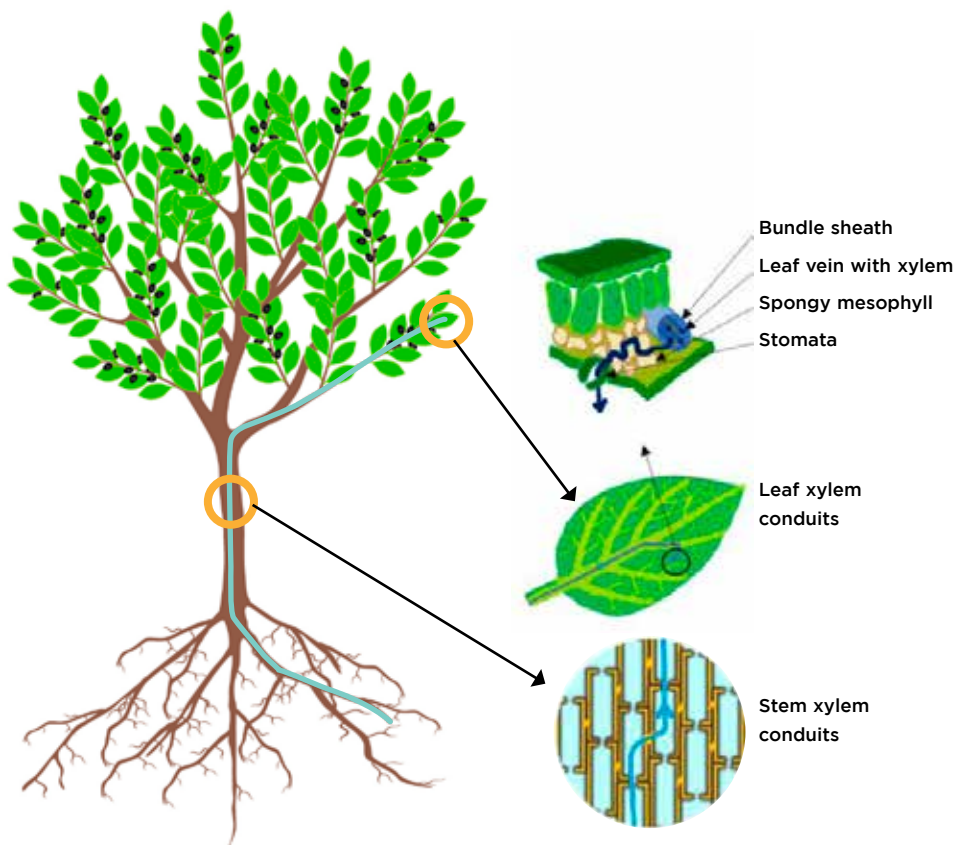


Illustration of plant hydraulic pathways. Pressure gradients exist between the soil in the water, the tree roots, the tree stems and the air. As pressure gradients increase, the tree is under greater water stress.

their leaves, even under changing environmental conditions, and are well-adapted to withstand periods of drought. Anisohydric plants, on the other hand, show a greater range of water potential across their leaves and are more flexible in their water balance; they can quickly adjust the water potential in their leaves in response to changing environmental conditions.

During the summer of 2022, graduate student Sadie Keller conducted weekly measurements of Red Sunset maple and red oak transpiration and water balance. She used a leaf porometer to measure the concentration of water vapor in the air around a leaf to determine the amount of water lost through the leaf over time, and to understand how environmental factors such as light, temperature and humidity influence the process.

Keller also used a pressure chamber to measure the water potential of plants. Her research showed that under ideal conditions, oaks use more water and grow faster than maples, which have a more conservative hydraulic strategy and restrict water movement at an earlier onset of drought.

Measuring the flow of water

Graduate students Keller and Scout Dahms-May have constructed an experimental device, the Stem Hydraulics Research Device (SHREDder), at the USDA Horticultural Crops Research Lab in Corvallis, Oregon. The device measures the flow of water through plant stems by applying a pressure difference across a stem segment and measuring the flow rate of water.

This information is used to calculate the hydraulic conductivity of the stem, which is a measure of its ability to transport water. By measuring the hydraulic conductivity of plant stems, researchers can better understand how plants respond to changes in their environment, such as variations in water availability or temperature.

A SHREDder was previously used by Dr. Rebecca Sheridan to investigate safe limits for cold storage, with results published in the February 2021 of *Digger* (see “The cold shoulder season” at www.DiggerMagazine.com/The-Cold-Shoulder-Season/). The current research on field-grown shade trees suggest that growers should aim to keep soil



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Close-up images of the different tools of the trade used to measure plant water use. The large photo below shows a pencil-sized stem extending from the cavitation chamber. The inset on the right shows a LI-600 porometer/fluorometer (made by LI-COR Biosciences, Lincoln, Nebraska), which measures leaf transpiration. COURTESY LLOYD NACKLEY / OREGON STATE UNIVERSITY



moisture pressure above -20 bar to avoid growth-reducing cavitation.

In the absence of other information, -15 bar to -20 bar can be a useful threshold to stay above since the wilting point for other tree crops is also around -15 bar to -20 bar. Note though that wilting points will vary based on the water status of the soil, the growth stage of the plant, and environmental conditions such as temperature and light.

To improve irrigation efficiency and achieve water conservation benefits without sacrificing plant quality, growers need to know how their plants respond to water deficits. However, species, life stages and pro-

duction methods differ in their sensitivity to water stress, making it difficult to determine an ideal set-point for irrigation scheduling.

Our research group at OSU will continue to determine plant stress thresholds for shade trees, new shrub varieties and plants developed by the OSU Ornamental Plant Breeding Lab. Keep up with our work by visiting the blog (<https://blogs.oregonstate.edu/nackleylab/>) and on Instagram (@NackleyLab). ☺

About the authors

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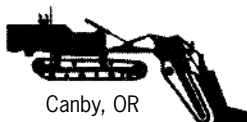
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Blessed to be part of this industry

It took my legendary predecessor, Clayton Hannon, to notify me that I now stand as the longest serving executive director in the history of the Oregon Association of Nurseries. I thought this couldn't possibly be correct, but as it turns out, as normal, Clayton had his facts straight.

Over the last 12 years, I have had the pleasure and honor to work side-by-side with our members and leaders to navigate both good and challenging times. This is my 150th column in *Digger*, and it feels like I am still just getting started.

My beginnings with OAN

I started my OAN career as your director of government relations, and I remember very well the interview process that got me the job. All I really knew about the OAN was through my time working alongside Gresham nurseryman Rod Park at the Metro regional government, where I served as chief of staff and he was a Metro councilor.

Did I have any direct state lobbying experience? Not technically. Federal? Well, I worked for the United States Senate in Bob Packwood's office, so ... yes? Did I know the issues that ag and nurseries face? Somewhat. But other than cramming and trying to cobble together legislative agendas over the previous five years, I didn't know a lot.

I am forever grateful to Dave Van Essen, Pete Brentano, Bob Terry and Kathy LeCompte. They put me through the paces to see if I could handle the job.

Could the industry teach me the green side? Yes. My strength was my experience in the political arena, and the ability to reach across party lines to build consensus.

I openly asked the hiring committee if they wanted to be right — or build influence and be a player. I was hired.

The start of my five year run began with Kathy LeCompte calling me on my way home from signing on the dotted line. She was then the chair of the Government Relations Committee. The fact that I did not start for two weeks made no difference to Kathy (or to me).

I love this industry. I love its non-nonsense perspective and hard work. We stacked up victories, including a landmark estate tax bill (that was taken apart by state agencies who did not like it). We built a reputation of being bipartisan and solution-oriented. This would not have happened without the trust and commitment of our member leaders.

Here are the keys — then chaos

The perfect storm of the 2008 recession was as deep as it was long. By 2010, the industry was hit hard. One-third of Oregon nurseries ceased operations.

I became executive director in the midst of this. Good people would call me, despondent and crying over closing down. I took each and every one of those calls to heart because the pain was real.

In the face of true economic calamity, the association needed to push hard to protect the industry, regardless of whether operations were members or not.

We went out to nurseries of all sizes and made personal visits. Staying in the office in Wilsonville is not the best way to understand what is happening on the ground.

That first year, the OAN staff visited 300 of our members. Bad news does not get better with time, so the board jumped into action. During the long road to recovery, the industry endured problematic federal pest and disease regulations, a changing legislature less in touch with rural issues, and toxic immigration fight.

The OAN decided to lead at every level, both at home and nationally. It was the best decision the board ever made. We achieved a landmark compromise with developers on urban-rural reserves, successfully passed driver privileges for undocumented workers (twice), and secured the state's first water supply bill. Our ability to wage common sense and wield influence grew over the last decade.

The shoe will drop again

In 2020, COVID became the great "time out" of our times. It will be the subject of research papers for decades to come. Through hard work, we made sure the nursery industry was deemed essential to the Oregon economy, so it could stay operational.

That wasn't a given. The nation was a chaotic mess. Trucks were being turned around if a re-wholesaler or garden center was closed in a particular state.

Did the OAN wait for the paint to dry on COVID-driven logistics problems? No



Jeff Stone
OAN EXECUTIVE DIRECTOR

— that's not our way.

Through the work of elite nursery association executives, we created a map of the U.S. and Canada to give growers the info to ship with confidence. Jim Simnitt, who was OAN's president at the time, said it was the single biggest game changer that he could remember. I was proud of our members' leadership, and it made a difference.

In 2023, the shoe is dropping with a more antagonistic Oregon Legislature, and we will do what we always do: fight for the industry.

2023 is a big year for the OAN

The OAN turns 90 this year, which is worth celebrating. We will do so at the Annual OAN Convention October 28–29 in Central Oregon.

From humble beginnings and strong vision, our industry continues to stand on the shoulders of those who came before to make it what it is today. We have achieved nearly \$1.4 billion in sales, and are third largest nursery state in the country. Pound for pound, I will take Oregon's growers and put them up against any ag sector in the world.

This year, the Farwest Show is celebrating its Golden Anniversary — that's 50 years of commerce, networking and sharing the many gifts of nursery production in our little corner of the Pacific Northwest. Yes, trade shows are changing in a virtual world, but there is no substitute for a handshake — or for seeing plants and trees with your own eyes. Come to Oregon in August. I will buy you a beer of gratitude.

On behalf of my family who has grown up and have been blessed by the many friendships and family gatherings — thank you for letting me serve as your executive director. ☺

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