Hardwood Plantings and Cover Crops in the Midwest

Part III. Enhancement of Pollinator Habitats within Tree Plantings

J. W. ‘Jerry’ Van Sambeek, Retired Research Plant Physiologist and Agroforester, USDA-FS-NRS and UMC Center for Agroforestry, Columbia, MO; cm5jwvs@gmail.com.

This is the third in a series of three articles about using cover crops in hardwood plantings. Part 1 on cover crops and hardwood tree plantings in the January 2020 bulletin and Part II on cover crops and soil health in the May 2020 bulletin.

Declining populations of honeybees and monarch butterflies have brought national attention to the importance of reversing the decline in pollinators and other beneficial insects. Over 100 agricultural crop species in North America, whose fruits and seeds provide over 30 percent of the food we consume, need a pollinator to achieve their full yield potential (Macher, et al. 2010). It is easy to envision using cover crops in tree plantings that will both improve both soil and tree health and aid in restoration of suitable habitats supporting pollinators and other beneficial insects.

The 2008 and 2014 Farm Bills contain specific language that made pollinators a priority within USDA conservation programs and calls for enhancement or restoration of millions of acres for pollinator habitat. Under the ‘National Strategy to Promote the Health of Honey Bees and Other Pollinators,’ almost 200,000 acres were signed up for planting to a mix of forbs to provide nectar, pollen, and nesting sites. It is estimated that benefits from pollination by honey and native bees contribute an estimated 3 billion dollars annually to the US economy.

Besides the introduced European honeybee, there are close to 4,000 other mostly native bee species and...
Board of Directors

Executive Committee

President
William Hammit
117 Hidden Cove Ct
Seneca, SC 29672
864-986-8510
hammitw@clemson.edu

Vice President
John Katzke
2619 North Woodhaven Drive
Peoria, IL 61604
309-678-2269
ntnre2@comcast.net

Immediate Past President
Dusty Walter
2-4 Agriculture Building University of Missouri, Columbia, MO 65211
573-884-7991
walterw@missouri.edu

Executive Director/ Bulletin Editor
Liz Jackson
International Headquarters
Wright Forestry Center
1067 N 725 W
West Lafayette, IN 47906-9431
765-583-3501
Fax: 765-583-3512
jackson@purdue.edu

Appointed Past President
Larry Krotz
2730 230th Street
Washington, IA 52353
319-633-459
lskrotz@yahoo.com

AWMA Representative
Brian Brookshire
505 East State Street
Jefferson City, MO 65101
573-634-2332
Fax: 573-635-2591
brian@moforeset.org

Industry Representative
Logan Wells
10220 State Highway 27
Hayward, WI 54843
715-490-3587
logan.wells@wisconsin.gov

International Representative
Guillermo Pardillo
Arbor America
7852 W 200 S
West Point, IN 47992
765-490-4334
gpardillo@arboramerica.com

University Representative
Dusty Walter
203 ARBR Building University of Missouri, Columbia, MO 65211
573-884-7991
walterw@missouri.edu

State Representative
OPEN

Logger Representative
Ben Bruggeman
341 Cielo Ave
Monticello, IA 52310
563-543-8293
benbruggeman77@hotmail.com

HTIRC Representative
Matthew Ginzel
Director, HTIRC
901 W. State Street
West Lafayette, IN 47901-2089
765-494-9369
mginzel@purdue.edu

Landowner Representative NW
John Ouellette
5045 LaCrosse Lane
Madison, WI 53705
608-231-1145
joquellette@sbcglobal.net

Landowner Representative SW
John Buchanan
5641 Maverick Lane
Valle Fks, CO 8088-5176
785-490-4334
diehl421@gmail.com

Landowner Representative SE
John Kelsey
19540 Kanawha Valley Rd
Southside, WV 25187-8604
304-593-3199
jfknutz@gmail.com

Landowner Representative NE
Robert Johnson
320 E Main St
Lancaster, OH 43130
Tel: 740-304-4676
berkeleytechnology.johnson@gmail.com

Walnut Council Bulletin Advertising Policy

The Walnut Council attempts to assist in the transfer of technical information pertaining to the growing and harvesting of walnut and walnut products with the publication of the Walnut Council bulletin three times per year.

1. The Council reserves the right to exercise editorial judgment in the products it will accept for advertising.
2. The Council expects the advertiser to be truthful and to guarantee reasonable satisfaction to the consumer.
3. The Council does not endorse the advertised products or services, nor does the Council make any warranty, expressed or implied.
4. All advertisers are subject to Indiana Statutes regarding false or misleading advertising.
5. Advertising may be cancelled for (a) non-payment, (b) violation of Indiana law, and/or (c) customer complaints.
6. The advertising rates for three issues of the same advertisement are $100 for business card, $200 for quarter page, $300 for half page, and $400 for full page.

AWMA Representative
Manny Mielke
304-190-8519
pecanman@centurylink.net

State Chapter Presidents

Illinois
Casey Calvert
1824 St Philips Rd
Evansville, IN 47712
812-431-1811
swcrops@gmail.com

Indiana
Claude Diehl
8315 State Rd 26 West
West Lafayette, IN 47906
765-490-4334
diehl421@gmail.com

Iowa
Cindy Heisendorfer
2437 Arlington
Davenport, IA 52803
363-940-3654
heisendorfer57@gmail.com

Kansas
Charles Barden
Kansas State University
2021 Throckmorton Hall, HFFR
Manhattan, KS 66506
785-532-1444
cbarden@k-state.edu

Maryland
David Robbins
5401 Rue Saint Lo Drive
Reisterstown, MD 21136
410-517-3650
dave.robbins@maryland.gov

Michigan
Mike Jones
12375 Gilkey Lk Rd
Delton, MI 49046
269-671-4988
skjones@aol.com

Missouri
Dusty Walter
2-4 Agriculture Building University of Missouri, Columbia, MO 65211
573-884-7991
walterw@missouri.edu

Ohio
William Hammit
Clemson University
117 Hidden Cove Ct
Seneca, SC 29672
864-986-8510
hammitw@missouri.edu

Wisconsin
Manfred Mielke
18664 Infield Road
Sparta, WI 54656
608-269-1827
Manny.mielke@yahoo.com

Committee Chairs

Finance & Audit
LeRoy Sievers
716 Driftwood Dr
Lincoln, NE 68510
Tel: [402] 488-9988
leroy.sievers@gmail.com

Economics
OPEN

Education
Lenny Farlee
Extension Forester, HTIRC
713 West State Street
West Lafayette, IN 47901
765-494-2153
lfarlee@purdue.edu

Legislative
Phil Moore
28801 East 219th Street
Pleasant Hill, MO 64080
816-489-5529
pecanman@centurylink.net

State Chapters
OPEN

Nut Culture
Phil Moore
28801 East 219th Street
Pleasant Hill, MO 64080
816-489-5529
pecanman@centurylink.net

Silviculture
R. Daniel Schmoker
15703 Stone Fork Dr
Houston TX 77084
217-416-1587
danwalnut1@gmail.com

Tree Improvement
Philip O’Connor
IDNR-Vallonia State Nursery
PO Box 218
Vallonia, IN 47281
812-358-3621
Fax: 812-358-9033
poconnor@idnr.in.gov

 Walnut Council Bulletin

The Walnut Council attempts to assist in the transfer of technical information pertaining to the growing and harvesting of walnut and walnut products with the publication of the Walnut Council bulletin three times per year.

1. The Council reserves the right to exercise editorial judgment in the products it will accept for advertising.
2. The Council expects the advertiser to be truthful and to guarantee reasonable satisfaction to the consumer.
3. The Council does not endorse the advertised products or services, nor does the Council make any warranty, expressed or implied.
4. All advertisers are subject to Indiana Statutes regarding false or misleading advertising.
5. Advertising may be cancelled for (a) non-payment, (b) violation of Indiana law, and/or (c) customer complaints.
6. The advertising rates for three issues of the same advertisement are $100 for business card, $200 for quarter page, $300 for half page, and $400 for full page.
It has been about six months since I last communicated and over a year since I last saw most of you! Thankfully that is about to end as we are closer to putting COVID 19 to bed, and our walnut trees are budded-out for another year of wonderful growth. Last year was a “lost” year as far as society was concerned, but you can always count on our forests and trees providing an element of pleasure to our lives. I know my walnut trees sure offer pleasure to my life, especially during the recent pandemic!

I am sad, as I believe we all are, that we could not have “public” state chapter field days, our annual conference, and even Walnut Council board meetings. But, that does not mean your Walnut Council was not active. For example, the WC Bulletin continued to be published, several new management webinars were offered, two work-days were held at the Al Goetsch property in Wisconsin and several Walnut Council board meetings were conducted by zoom. While the WC board had to cancel the annual conference for July 2021, we decided to conduct three “Regional Mini Meetings” as an alternative this summer. These are described elsewhere in the Bulletin. The Regional meetings offer an EXCELLENT opportunity to gather again, exchange ideas about walnut management, and rediscover what we all lost during this last year because of the virus.

Our “State Chapter WC Field Days” are again becoming available and offer even closer-to-home opportunities to attend Walnut Council activities. Please participate and take advantage of your and neighboring state chapter meetings. I attended the Indiana State Chapter meeting on April 24, held in Martinsville, IN. Nearly 50 individuals attended, and enjoyed a great opportunity to exchange knowledge about black walnut science and management. Another opportunity occurs this June 5th, when the Ohio Chapter will hold its field day at the Duckworth Farms, near Greenfield, OH, from 9:30 – 2:30. The Duckworth Farms received the Ohio Tree Farm of the Year Award in 2016, has managed walnut trees on the farm since 1939, and have a great tour planned for us. All State Chapters are encouraged to plan and conduct field days/tours during 2021.

I recently visited my son in Clarksville, TN and visited a veneer log buyer’s operation while there. Charlie Jackson buys veneer logs of black walnut and white oak, and ships the logs in containers to Germany and China. Some notes he shared: last year was one of his best, the tariffs against China really did not hurt his business, he sells more walnut to Germany than China, and he has three containers of walnut ready to ship to Germany, as soon as the containers can be located. There must have been nearly 200 walnut and white oak veneer logs present on his lot; some of the walnut logs being 40+ feet long. I could only dream about having a walnut log like one of these in another 75 years (in more ways than one I dream, since I am 78 years old already!

One of my favorite sections in older copies of the Walnut Council Bulletin was devoted to pertinent black walnut literature. Here are three publications I recommend for your consideration:

- Black Walnut Plantation Management, FNR 119, 11 pg.
- Fertilizing, Pruning, and Thinning Hardwood Plantations, FNR 215, 7 pg.

Available free from Purdue University Extension: 1 888-398-4636; http://www.ces.purdue.edu.

Or better yet, order the Walnut Council Literature Thumb-Drive, which contains hundreds of publications. Available from Walnut Council Foundation for $20, contact Ken Konsis at kenkonsis@aol.com or purchase one at a meeting.
Part III. Enhancement of Pollinator Habitats within Tree Plantings  

Continued from page 1

40 bumblebee species found in the US (Fig. 1). About 70 percent of the native bee species nest in the soil (Barickman 2004). Most are solitary with each female locating and provisioning her own nest with pollen before laying eggs. Roughly 30 percent of native bees nest in woody materials which can include dead wood or plants with pithy stems (Bentrup, et al. 2019).

In addition to bees, cover crops increase the abundance of other pollinators including insects such as butterflies (Fig. 2), moths, some beetles, and a diverse population of beneficial insects such as predatory lady beetles, lacewings, hover flies, and parasitic wasps (Bentrup, et al. 2019). These insects also need pollen and nectar sources during part of their life cycle (SARE 2015). Managing for predatory and parasitic insects can also decrease the number of destructive insects including aphids, slugs, caterpillars, and grasshoppers (Grantham and Arnold 2017). Studies by the University of Missouri Center for Agroforestry have shown that the number and diversity of predatory and parasitic insects are greater in a walnut-alfalfa alley-cropping practice than in pure alfalfa stands (Stamps, et al. 2009). A three-year study in the United Kingdom found the number of solitary and bumble bee species in an agroforestry system was increased 2 and 2.4 fold over the number in the monoculture system (Varah, et al. 2020).

Figure 2. Tiger swallowtail butterfly feeding on flowers of cup plants growing in bottomland walnut planting

Some trees and shrubs provide significant forage (pollen and/or nectar) for native bees although walnut, pecan, and chestnut are not usually included on the list. Wind-pollinated, nut-producing trees, however, add value by making it easier for pollinators to fly and visit flowers as well as serve as buffers to drifting pesticides. Honeybees stop pollinating when it gets too windy and prefer to forage on the lee side of trees. Increases in pollination efficiencies can extend out into a tree planting 10 to 15 times the height of the trees. Also, tree bark provides an important source of overwintering habitat for some butterflies, moths, and beetles.

Legumes are excellent sources of pollen and nectar for pollinators and beneficial insects in addition to being excellent cover crops. Wells (2017) reports that planting legumes in pecan plantings can build-up populations of beneficial insects. When the cover crop dies or goes dormant, the beneficial insects are driven up into the trees to feed on other pecan insects. Although grass cover crops do not provide nectar, they can provide pollen. Grass pollen, however, is only marginally attractive to bees because it has a lower protein content than the pollen of broadleaf plants.

It is important when managing for pollinators to use a mix of species to assure flowers are present throughout most of the growing season (see bloom period in Table 2, May 2020, p.6). Bee species are attracted to different kinds of flowers depending on their color, structure, and size (see bee forage value in Table 2). Preferred flower colors include purple, violet, yellow, white, blue, and red although honeybees apparently cannot detect red. Preference should be given to species with long flowering periods. The NRCS recommends a mix of at least 10 species with one bunch grass or sedge species and a minimum of 3 species flowering during the spring (March-May), summer (June-August), and fall (September-November). They suggest managing for at least one plant species that flowers very early as food source for pollinators emerging from hibernation and one species that flowers very late as pollinators go into winter dormancy. NRCS emphasis is on using native wildflowers or forages because they are less likely to become invasive, they are more tolerant of low fertility soils, and they use less water per ton of biomass than introduced forages. Also, native wildflowers seldom require use of pesticides.

In a nut-producing orchard, cover crops should be chosen that will not be in flower when insecticides are to be applied to control insects such seed-infesting curculio weevils (Vaughan and Black 2008). Alternatively, managers could mow the cover crop to reduce numbers of flowers just before spraying or spray half of the area on different days so insects can leave the area or have time to move back into the treated areas. Other options are to spray early in the morning or late in the evening when bees are least active and when insecticides are less likely to volatilize or drift. When possible, avoid the
Part III. Enhancement of Pollinator Habitats within Tree Plantings

Continued from page 1

use of systemic insecticides which are absorbed and move through the plant injuring both the target pest as well as pollinators and beneficial insects foraging pollen and nectar. The systemic neonicotinoid insecticides are especially harmful because they can persist in the environment and be taken up from the soil years later.

An easy option for restoration of pollinator habitat is to establish permanent native wildflower strips within the tree rows or wide strips along fence rows or the borders of the tree planting (Fig 3). The NRCS recommends strips 30 feet wide along field borders to facilitate periodic mowing or patch burning needed to maintain plant diversity. If strips include wildflowers and grasses, use bunch grasses like orchard grass or little bluestem. Permanent wildflower strips within tree rows provide undisturbed areas for ground nesting bees to excavate their underground tunnels along with a source of pollen and nectar through the growing season.

The Midwest Cover Crops Council has developed a new online tool (http://mccc.msu.edu/cctesttool/?_ga=2.225752218.1230463503.1600301867-2026535694.1600301867) to help landowners select the cover crops adapted to their area and anticipated benefits from using cover crops (Wallheimer 2020). To use this tool, landowners provide information in pull down menus as to their location (state and county), soil drainage class and flooding frequency, and the primary goal(s) they hope to achieve by using cover crops. Of the 12 goals, goals such as soil builder, nitrogen scavenging, nitrogen fixation, or fighting weeds will apply to tree plantings as well as cropland. The tool ranks cover crop options according to the sum of the rankings for each goal selected from 4 (excellent) to 0 (poor) (Fig. 4). Evaluate each option carefully because some high-biomass options will be too competitive for use in tree plantings. Clicking on each cover crop brings up data sheets that offer more information for the species such as best seeding dates and seeding rates. Additional agronomic information is also available on the PLANTS database (USDA-NRCS 2017).

The online tool does much of the work you had to do to select cover crops using Table 1 (January 2020, p. 5) in Part 1 and Table 2 in Part 2 of this series of articles. A 1-hour webinar recorded on 23 September 2020 on use of the selector tool is available at http://mccc.msu.edu/selector-tool/.

Cover crops and forbs of high value to pollinators and beneficial insects include annuals such as buckwheat, hairy vetch, rapeseed, crimson clover, phacelia, sunn hemp, and sunflowers; biennials such as partridge pea, sweet clover, forage radish, and turnips; and perennials such as alfalfa, kura clover, white clover, red clover, sainfoin, and the tick trefoils (see bee forage value or beneficial insect value in Table 2). Many of these same plant species also provide important benefits for improving soil health in tree plantings as N sources through nitrogen fixation (Fig. 5) during the growing season or nitrogen scavenging overwinter when the trees are dormant.

Buckwheat is one of the best cover crops for attracting bees and beneficial insects and increasing soil organic matter. It grows rapidly, smothering other weeds, and is easily killed by mowing when seed is still immature so it does not become invasive. Partridge pea is an especially promising native prairie plant for establishing between trees. It can fix its own N, has a relatively long blooming period, attracts

Figure 3. Photo of a five-year old native wildflower border taken in July that received minimal management after it was seeded without native grasses.

Figure 4. The new cover crop selection tool developed by the Midwest Cover Crops Council offers cover crop recommendations and information customized for individual goals and historical weather data by county in 14 midwestern states and the province of Ontario.
A New Carbon Program for Hardwood Landowners: Webinar

Tuesday, June 15 • 12 PM ET/11 AM CT
A carbon program is coming to the Midwest in June, allowing landowners to enroll their woodlands for carbon credits at no cost. In this webinar, Alex Macintosh, Director of Landowner Success at SilviaTerra, and his colleagues Lillian Hogan and Jeff Wright, will share information on their data-driven forest carbon marketplace and how owners of woodlands of all sizes can participate now. This event is co-hosted by Walnut Council, National Woodland Owners Association, and Indiana Forestry & Woodland Owners Association.

Register for the webinar (online via Zoom) at https://walnutcouncil.org/events/. Learn more about Silvia Terra’s programs at https://www.silviaterra.com/.

Can I Get Paid for the Carbon in my Woods?
Many woodland owners have heard about forest carbon markets, or the ability for landowners to be paid for the carbon benefits their trees and forest provide. Forest carbon is considered as a forest product that can be a viable alternative source of income for forest landowners.

This article from NC State Extension describes the forest carbon market today and explains the possible opportunity it represents for certain forest landowners: https://content.ces.ncsu.edu/an-introduction-to-forest-carbon-offset-markets.

Welcome New Members!
The following members made a long-term commitment and show of support to Walnut Council by becoming Life members:
Caleb Kell, IN; H. Neal Sievers, IN; LeRoy Sievers, NE; John Ouellette, WI; John Ouellette, Jr, WI; Meg Cates, WI; Jim McKenna, IN; Anne Keller, IN; Melissa Cullina, IL

We are pleased to welcome these new annual members to the Walnut Council since last bulletin:

Yvette Amerman, Kirksville, MO
Don Bitter, St Louis, MO
Miles Brite, Stockton, MO
Steve Conner, Shelby, IN
John Curtis, Pleasant Lake, IN
Lawrence Curtis, Jr, Angola, IN
Rebecca Fallow, Los Altos, CA
Lt Col Rick Ford, Peachtree City, GA
Jonathan Green, Bloomington, IN
Doug Gross, Frederick, MD
Alvin Gross, Prescott, WI
Steve Grote, Saint Charles, MO
David Haeberle, Bloomington, IN
Chris Hay, Caseyville, IL

Don Hoffman, Black River Falls, WI
Christopher Huiras, La Crosse, WI
Evan Kokoska, Zionsville, IN
Greta Krawczyk, Logansport, IN
Bruce Loger, Winneconne, WI
Roger Luckett, Meredosia, IL
Mary Kate Martin, Omaha, NE
Christina Newnam, Chillicothe, IL
Carol Nickelson, Sabetha, KS
Jennifer Obermann, Fredericktown, MO
Brandon Pellmann, Suamico, WI
Michael Phillips, Pasadena, CA
Martin Ray, Winfield, KS
John Roark, Pittsboro, IN

Terri Sanders, Elizabeth, IN
Joseph Shanahan, Burr Ridge, IL
Bennett Shouse, Berea, KY
David Sievers, Lincoln, NE
John Stambaugh, Bedford, IN
Matthew Stephens, Martinsville, IN
Matt Vance, Lincoln, NE
Sholom Vider, Jackson, NJ
Jim Wharam, Lafayette, IN
Rick Wineberg, Chicago, IL
Daniel Witte, Mt Horeb, WI
George Wood, Monon, IN
Shannon Woods, Mitchell, IN

We would also like to welcome the following new one-year email members:

Sharon Beach
Donna Bishop
Doug Bowen
Barbara Christmas
John Davies
Patrick Deak
Phil Eicher
Gwen Erwood

Michael Evans
Matthew Gadlage
Dave Gahimer
Jamie Hankinson
Paul Harding
Paul Harsin
Charles Hefley
Simon Higgs

Dianna Houston
Mark Jungemann
Phil Kahle
Al Koch
Robert Martin
Julian Martinez
Scott Miller
Connie Nagle

James Niekamp
Sally Parsons
Kurt Renner
Todd Reyburn
S Seiler
Gavin Smith
Garrett Smith
Grady Smith

Karen Ann Smith
Tom Stewart
Frank Thomas
Curt Vapor
Thomas Webb
Scott Werstler
Nominees Selected for Board of Directors

The following board roles are normally filled in the even numbered years for a two year term. This election was postponed for 1 year from 2020 to 2021. The Vice-President automatically assumes the duties of President the following year and Chair of the Awards and Nominating Committee the year after. All terms begin in August 2021 and run through the 2022 annual meeting.

If you should have an interest in participating on our board of directors in an upcoming term, please contact any board member.

Candidates for 2021-2022 term:

<table>
<thead>
<tr>
<th>Position</th>
<th>Nominee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vice President</td>
<td>Casey Calvert</td>
</tr>
<tr>
<td>Education Committee Chair</td>
<td>Lenny Farlee</td>
</tr>
<tr>
<td>Finance and Audit Committee Chair</td>
<td>Hugh B. Pence</td>
</tr>
<tr>
<td>Legislative Committee Chair</td>
<td>LeRoy Sievers</td>
</tr>
<tr>
<td>Nut Culture Committee Chair</td>
<td>Phil Moore</td>
</tr>
<tr>
<td>HTIRC Representative</td>
<td>Matt Ginzel</td>
</tr>
<tr>
<td>Logger Representative</td>
<td>Ben Bruggeman</td>
</tr>
<tr>
<td>International Representative</td>
<td>Guillermo Pardillo</td>
</tr>
<tr>
<td>Landowner SE Representative</td>
<td>John Kelsey</td>
</tr>
<tr>
<td>Landowner SW Representative</td>
<td>John Buchanan</td>
</tr>
</tbody>
</table>

Board Reports May 2021

Industry Report

By: Logan Wells, Forest Products Specialist, Wisconsin DNR

Softwood Lumber/Building Materials:

There has been a lot of attention to the rising building materials costs most notably record high softwood lumber prices. This is largely due to the excessive demand for building materials and limited production capacity. Extremely low interest rates are a significant factor driving the interest in building and remodeling homes. There is a huge disconnect in that high lumber prices mean high log and high stumpage prices. Many Walnut Council members, as landowners and sellers of timber, recognize that there is a difference in these markets and separate supply and demand factors at work.


Hardwood Lumber Prices:

Export markets, as well as domestic markets, have been strong since the first of the year and have led to increases in hardwood lumber prices. At the end of February, China announced continuing the tariff exclusions on both hardwood lumber and logs. Domestically, with the housing markets being strong, there is strong demand for cabinets, furniture and other home furnishings made from hardwood lumber.

https://www.nhla.com/chinaextendtariffexclusions/

Pulp & Paper:

White paper markets have continued to struggle with a lack of demand due to COVID impacts. Packaging, tissue and other specialty grades of paper are strong and growing in many parts of the country. The demand for recycled pulp/fiber continues to be uncertain and volatile due to recycling policy changes in China. This has led to interest, both in the US and globally, in virgin pulp production and markets.


Other News:

Tax credit for new wood stoves was recently approved. For qualifying appliances, there is a 26% federal tax credit.

http://biomassmagazine.com/articles/17609/covid-relief-bill-will-be-a-gamechanger-for-residential-wood-heat

Landowner Southeast Representative Report

By John Kelsey

For many years the West Virginia Forestry Division has been holding four regional information meetings – maybe two per year. I have traveled to many of these meeting and always bring home a new gem of forestry related knowledge. Typically, there a half dozen foresters-speakers and only about 20 attendees despite the free lunch.

I have wanted to be a presenter to make a pitch for the Walnut Council and growing black walnut. WV is a great candidate for our most valuable native species. Many small bottoms of prime agricultural soil are being abandoned each year. Who wants a three-cornered field when you own a 90-foot spray rig?

Along came COVID 19 and my grand plans were dashed. Dr. David McGill (a new Walnut Council member) came to the rescue. He started a monthly series of forestry webinars and asked me to speak at the first one. I gave my talk and there were 40 listeners, but there is no way of knowing how many were asleep. Since then, the attendance has grown steadily, and now is around 250, many from out of state.

Dr. McGill is a great host and usually has 4 topics about 20 minutes each. This webinar series has completely out-paced the former regional meetings. I doubt we ever go back.

You would be welcome to join. Learn more at: https://wvstewards.ning.com/
What Is a Walnut Council Foundation Tree?

Prepared by Jerry Van Sambeek, WCF Research Grants and Special Project Coordinator, in memory of Scott Brundage, Foundation Tree Program Coordinator

The concept for the Walnut Council Foundation (WCF) Tree was originally proposed by the late Foundation board member Scott Brundage as a way for landowners conducting a timber sale to select a standing tree or log and donate its value to the Foundation to help build an endowed fund. When the endowed funds were large enough, interest and dividends from investments were to be used to support WCF research grants and special projects. Note the two articles on page 9 highlighting successful funded grant projects.

Later the program was modified to ask landowners to identify a ‘special’ tree in their planting or woods they would be willing to ‘donate’ to the WCF, a 501 (c) 3 charitable organization. In exchange the WCF recognize the donation made to the endowed fund at Walnut Council annual meetings, and in the Walnut Council Bulletin.

With donations like the state champion American Beech in Louisiana and the Kentucky coffeetree in Illinois, landowners could decide what amount they wished to donate to the endowed fund in the name of their special tree. To date, the WCF has received donations totaling $8,253 dollars from ten landowners for ten walnut trees, an American beech tree, a Kentucky Coffee tree, and one sale of walnut logs from a thinning. In 2010, Scott Brundage presented all donors with framed certificates of appreciation.

The discount rate system is an interesting way to establish the present net value of a tree if know the current diameter-at-breast height (dbh), average growth rate or age, approximate stand density, and current prices for standing veneer and sawlogs for the different fine hardwoods.

With the recent passing of Scott Brundage, the WCF Board will be asking for someone to step up to coordinate the Foundation Tree program and help determine present net value of donated trees. The WCF looks forward to ‘receiving’ and recognizing more Foundation trees. The gifted tree can be a black walnut or any of the other fine hardwoods. Contact the Walnut Council office at walnutcouncil@gmail.com if interested in making a Foundation tree or any other type of donation.

The value of this 27' Kentucky coffeetree was donated by board member Dan Schmoker in 2015.
Cash Crops in Walnut Plantations

By Bill Hammitt

In 2014, I received a research grant from the Walnut Council Foundation. The title of the grant was, “Canaan Fir as an Intermediate Cash Crop in Fir/Walnut Mixed Plantings.” The project had two major Objectives:

• To determine if Black Walnut, and Juglone, have any observational/detrimental effects on Canaan Fir when grown as a Christmas tree.
• To determine the value of Canaan Fir as an intermediate cash crop in a walnut plantation.

The spacing design of the project called for Canaan Fir to be planted 7 ft. between rows by 5 ft. within rows (1000 firs/acre), and the walnut inserted every 5th row and at 20 ft. within a row (35 ft. by 20 ft. (60 walnut/acre).

While the research grant officially ended in 2017, the evaluation project has continued. The purpose of this note is to up-date findings from the project. In terms of objective (1), no detrimental effects have been observed in the Canaan Fir as a result of being grown in a mixed planting with black walnut. The firs planted in 2014 were approximately 7 ft. tall by Christmas, 2020 and entered the “choose and cut” market at $10 per foot (market value in Cincinnati, OH area). About 300+ trees were sold in 2020, for a potential value of $21,000+.

In order to address the actual value aspects of objective (2), an older preliminary test plot (one acre) of a very similar Canaan Fir – black walnut mixed planting can be reported. The firs were planted in 2008 and have been marketed since 2016. In 2019, 254 Xmas fir trees were sold at an average size of 8 ft. and $80 per tree, for a gross value of approximately $20,000.

In conclusion, Canaan Fir can be grown in a mixed plantation with black walnut with no apparent detrimental effects to the fir, at least during the rotation of Christmas trees. The Christmas trees can also serve as an intermediate cash crop while waiting for the black walnut to mature and enter the market place.

Editor’s note: If other Walnut Council members are interested in special research projects on their property, consider submitting a grant proposal to Walnut Council Foundation. Contact the office at walnutcouncil@gmail.com to learn more about the program, or look online at https://walnutcouncil.org/wc-foundation/current-projects/.

WC Foundation Supports Tree Planting Project

Michael Rechkemmer of Troop 66 in Monticello, Iowa submitted a request in 2019 for a Walnut Council Foundation Special Projects Grant to install “The Arnold E. Bruggeman Memorial Tree Planting” at the Eby’s Mill Wildlife Refuge in Jones County, Iowa.

Michael submitted: “This project is going to be a legacy and educational site for years to come for learning tree types and what the trees do for us. I will be planting 4,669 native hardwood trees and shrubs. A sign will also be placed at the project site identifying the project as “The Arnold E. Bruggeman Memorial Tree Planting” and all donors will also be recognized for their donation. We will be planting the trees in May 2020.”

He also submitted a stewardship tree planting plan and reported recently “last fall we spot planted more seedlings where obvious seedlings didn’t make it and where we ran out during the spring planting.” The Foundation was pleased to support this project and thanks Michael and his volunteers for their efforts.
Walnut Council 2021 Regional Meetings

In lieu of a large national multi-day event, Walnut Council is hosting three regional field days in July in Wisconsin, Missouri, and Indiana. We will be following all local and CDC guidelines for safety and have posted a safety guidance document on our events page on the website. If you are ready to safely attend a field day, consider registering for one event. Registration will be limited to 60 people per event, so sign up ASAP. Registrants who are feeling sick or running a fever should stay home. Each event will consist of a morning walking tour, with a box lunch and outdoor sit-down program in the afternoon. There will be plenty of time for networking and question and answers. Each tour is $20 to cover the cost of lunch and supplies.

For more information and to register for a program: https://walnutcouncil.org/events/annual-meeting/

Wisconsin Regional Field Day
Saturday, July 17 • Al Goestch Property

Located at Clinton, Wisconsin, just east of Beloit, the Goestch property was donated to the Walnut Council in 2019. The property consists of native walnut timber of very large size and high quality, a recent harvest with understory regeneration activities, and plantations of various ages.

Friday Agenda
6:30-8:30 PM  Optional meet and greet

Saturday Agenda
9:30-10 AM  Registration/networking
10:00-10:15  Opening and welcome, discuss safety, property overview
10:15-12:30  Property tours

Topics include: tree plantation establishment, mid-rotation management – pruning and thinning, post-harvest CSP program and regeneration plan, quality, grade, and volume of mature trees, harvest and results.

1:00-1:45  Lunch at Leeson Park, Beloit WI
1:45-3:15  Program on forest health, timber markets, and invasive species
3:15-3:45  Optional open Q & A session

Wisconsin Hotel Accommodations
A block of rooms is reserved for Friday, July 16. Information is available upon registration.

Forrest Keeling chairman Wayne Lovelace shows the benefits of their RPM seedlings.

Missouri Regional Field Day
Saturday, July 24 • Forrest Keeling Nursery

Located at Elsberry, Missouri, Forrest Keeling nursery grows over 1.5 million plants annually: seedlings, liners and container stock. They specialize in RPM-produced native plants and offer 380 different species. This includes 273 trees and shrubs species and 107 perennials. Finished stock includes caliper trees up to three inches in diameter. Learn more about Forrest Keeling: https://fknursery.com/.

Friday Agenda
6:30-8:30 PM  Optional meet and greet

Saturday Agenda
9:45-10:15 AM  Registration/networking
10:15-10:30  Opening and welcome, discuss safety, property overview
10:30-12:00  Forrest Keeling tours
12:00-1:00  Lunch at nursery
1:00-2:30  Program on forest health, timber markets, and invasive species
2:30-3:00  Optional open Q & A session

Missouri Hotel Accommodations
A block of rooms is reserved for Friday, July 23. Information is available upon registration.

Both large mature walnut trees and young plantations are growing at the Goestch property.
**Walnut Council 2021 Regional Meetings**

**Indiana Regional Field Day**
Saturday, July 31 • Southeastern Purdue Agricultural Center (SEPAC)
Located near Butlerville, Indiana, SEPAC is the largest Purdue Agricultural Center, with 2430 acres including 1600 acres of timber. They host practical agronomic and forestry research and field programs on a variety of topics. Current forestry projects include: insect and disease monitoring, tree planting demonstrations, screening butternut for resistance, comparing pure and hybrid butternut, progeny tests of black walnut families, impacts of fencing, fertilizer, and genetics on walnut growth. Learn more about SEPAC: [https://ag.purdue.edu/arge/pac/Pages/sepac-home.aspx](https://ag.purdue.edu/arge/pac/Pages/sepac-home.aspx).

**Friday Agenda**
6:30-8:30 PM Optional meet and greet

**Saturday Agenda**
9:30-10 AM Registration/networking
10:00-10:15 Opening and welcome, discuss safety, property overview
10:15-12:30 Property tours
1:00-1:45 Lunch
1:45-3:15 Program on forest health, timber markets, and invasive species
3:15-3:45 Optional open Q & A session or additional tour stop

**Indiana Hotel Accommodations**
A block of rooms is reserved for Friday, July 30. Information is available upon registration.

**Activities in the Areas**

**Beloit, Wisconsin**
Learn more at [www.visitbeloit.com](http://www.visitbeloit.com).

**Logan Museum of Anthropology:** The Logan Museum is Beloit College’s center for exploring world cultures through over 300,000 collection objects.

**Historic Auto Attractions, Roscoe, IL:** Has over 75 historic autos, including the world’s largest collection of presidential, worlds leaders limousines and much more!

**Beckman Mill:** On the grounds of the 50-acre county park you will see an authentically restored 1868 grist mill, a new dam, saw mill display, 1840s cooperage, creamery, blacksmith shop, vintage garden, and more.

**DC Estate Winery:** Experience the romantic taste of Tuscany in South Beloit’s DC Estate Winery.

**North Vernon, Indiana**

At Stream Cliff Farm, Tearoom and Winery you will find hundreds of varieties of herbs, perennial flowers, everlasting, old-fashioned roses and butterfly bushes. Display gardens arranged in quilt pattern designs, many with water features.

**Muscatatuck National Wildlife Refuge** visitors can hunt, fish, and view abundant wildlife.

**The Calli Nature Preserve** contains high-quality limestone cliffs, waterfalls, mesic and dry-mesic upland forests. The trail head for the self guiding trail is adjacent to the parking lot on the same side of the road. The trail is just a bit over two miles long.

**Selmiier State Forest** is 355 acres with hunting, fishing and hiking trails all available.

**Elsberry and Troy, Missouri**
Learn more at [https://www.visitmo.com/](https://www.visitmo.com/).

**Clarence Cannon National Wildlife Refuge:** A wonderful quiet spot to see a lot of different wildlife. Great auto tour allows you to see birds and animals up close.

**Honey Hive Farms** sells bees, bulk honey and has beekeeping classes. Our goal is to “Save The World One Bee At A Time!"

**Cuivre River State Park** is a bit of the Ozarks outside of the Ozarks—the park’s renowned trails go through prairies and forests of oaks and hickories. The park’s three natural areas feature sinkhole ponds and woodlands that would be more at home in southern Missouri.

**Bonne Terre Mine** is a unique abandoned mine. When the mine closed in 1962, the pumps were turned off and it flooded. We maintain the lake level with pumps for the Boat/Walking Tours.
Annual Meeting Fundraising
Proceeds from past annual meeting raffles and silent auctions have supported the Walnut Council annual meeting expenses with a portion to the Walnut Council Foundation for their Research and Projects grant program. This year we won’t have a large multi-day meeting so will be having limited fundraising:

- silent auctions at each regional meeting with approximately 10-15 items
- Walnut Council walnut and leather coasters for sale at $10 each or 4 for $30.
- 3 point hitches and some wood boards for sale at the Wisconsin tour

We encourage and appreciate your support of Walnut Council and the Foundation!

Walnut Council Financial Reports

Walnut Council Balance Sheet as of 12/31/2020

<table>
<thead>
<tr>
<th>ASSETS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Assets</td>
<td></td>
</tr>
<tr>
<td>Checking/Savings</td>
<td></td>
</tr>
<tr>
<td>PEFCU-Checking</td>
<td>3,324.72</td>
</tr>
<tr>
<td>PEFCU-Savings</td>
<td>50.45</td>
</tr>
<tr>
<td>1015 - Paypal bank account</td>
<td>456.20</td>
</tr>
<tr>
<td>Total Checking/Savings</td>
<td>3,831.37</td>
</tr>
<tr>
<td>Other Current Assets</td>
<td></td>
</tr>
<tr>
<td>EdwardJones accounts</td>
<td></td>
</tr>
<tr>
<td>Edward Jones - Loan</td>
<td>-2,207.67</td>
</tr>
<tr>
<td>Total Stock Veritiv Corp</td>
<td>20.79</td>
</tr>
<tr>
<td>Total Stock Weyerhaeuser</td>
<td>5,364.80</td>
</tr>
<tr>
<td>Total Stock Intl Paper</td>
<td>4,972.00</td>
</tr>
<tr>
<td>Total EdwardJones accounts</td>
<td>8,149.92</td>
</tr>
<tr>
<td>Vanguard Group (Life)</td>
<td></td>
</tr>
<tr>
<td>Total Vanguard Group-Intermediate Tm</td>
<td>8,736.79</td>
</tr>
<tr>
<td>Total Vanguard Group-Balanced Index</td>
<td>36,621.43</td>
</tr>
<tr>
<td>Total Vanguard Group (Life)</td>
<td>45,358.22</td>
</tr>
<tr>
<td>Total Other Current Assets</td>
<td>53,508.14</td>
</tr>
<tr>
<td>TOTAL ASSETS</td>
<td><strong>57,339.51</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIABILITIES &amp; EQUITY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Liabilities</td>
<td></td>
</tr>
<tr>
<td>Other Loans</td>
<td>6,600.00</td>
</tr>
<tr>
<td>Foundation Contribution</td>
<td>9,511.00</td>
</tr>
<tr>
<td>State LM ($200)</td>
<td>13,600.00</td>
</tr>
<tr>
<td>LM Dues ($250)</td>
<td>11,450.00</td>
</tr>
<tr>
<td>LM Dues ($300)</td>
<td>9,600.00</td>
</tr>
<tr>
<td>LM Dues ($400)</td>
<td>12,400.00</td>
</tr>
<tr>
<td>LM Dues ($500)</td>
<td>13,400.00</td>
</tr>
<tr>
<td>LM Dues ($700)</td>
<td>7,350.00</td>
</tr>
<tr>
<td>Total Liabilities</td>
<td>83,911.00</td>
</tr>
<tr>
<td>Equity</td>
<td></td>
</tr>
<tr>
<td>Portfolio Gain\Loss</td>
<td>44,967.80</td>
</tr>
<tr>
<td>Fund Balance</td>
<td>309.17</td>
</tr>
<tr>
<td>3000 - Opening Bal Equity</td>
<td>5.00</td>
</tr>
<tr>
<td>3900 - Retained Earnings</td>
<td>-41,298.14</td>
</tr>
<tr>
<td>Net Income</td>
<td>-30,555.32</td>
</tr>
<tr>
<td>Total Equity</td>
<td>-26,571.49</td>
</tr>
<tr>
<td>TOTAL LIABILITIES &amp; EQUITY</td>
<td><strong>57,339.51</strong></td>
</tr>
</tbody>
</table>

Walnut Council Profit and Loss – January 1-December 31, 2020

<table>
<thead>
<tr>
<th>Ordinary Income/Expense</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td></td>
</tr>
<tr>
<td>Total 4000 - Membership dues</td>
<td>20,155.00</td>
</tr>
<tr>
<td>Total 4017 - State Chapter Dues</td>
<td>4,960.00</td>
</tr>
<tr>
<td>Total 4031 - Voluntary State Contributions</td>
<td>985.00</td>
</tr>
<tr>
<td>4033 WC Voluntary Contribution</td>
<td></td>
</tr>
<tr>
<td>4033.3 - WC Legacy Fund contribution</td>
<td>3,550.00</td>
</tr>
<tr>
<td>4033.1 - WC Operating Contribution</td>
<td>815.00</td>
</tr>
<tr>
<td>4033.2 - WC TCD contribution</td>
<td>26.00</td>
</tr>
<tr>
<td>Total 4033 WC Voluntary Contribution</td>
<td>4,391.00</td>
</tr>
<tr>
<td>4060 - Annual Meeting</td>
<td></td>
</tr>
<tr>
<td>4062 - Sponsorships</td>
<td>561.25</td>
</tr>
<tr>
<td>Total 4060 - Annual Meeting</td>
<td>561.25</td>
</tr>
<tr>
<td>4090 Liability Ins Reimbursemen</td>
<td>593.00</td>
</tr>
<tr>
<td>4089-Special Project</td>
<td>2,115.15</td>
</tr>
<tr>
<td>Total 4089-Special Project</td>
<td>2,115.15</td>
</tr>
<tr>
<td>TOTAL Income</td>
<td><strong>33,760.40</strong></td>
</tr>
<tr>
<td>Expense</td>
<td></td>
</tr>
<tr>
<td>5062 - Legacy Fund capital campaign</td>
<td>463.88</td>
</tr>
<tr>
<td>5023 - Interest Expense</td>
<td>92.94</td>
</tr>
<tr>
<td>5000 - Office Expense</td>
<td></td>
</tr>
<tr>
<td>5001-Exec Dir Salary</td>
<td>22,618.64</td>
</tr>
<tr>
<td>5018 Postage</td>
<td>1,000.04</td>
</tr>
<tr>
<td>5017 Internet Expenses</td>
<td>662.16</td>
</tr>
<tr>
<td>5013 Copier Supplies</td>
<td>39.06</td>
</tr>
<tr>
<td>5016 Office Expense</td>
<td>955.06</td>
</tr>
<tr>
<td>5000 - Office Expense - Other</td>
<td>3,093.30</td>
</tr>
<tr>
<td>Total 5000 - Office Expense</td>
<td>28,368.26</td>
</tr>
<tr>
<td>5025 Accounting &amp; Bookkeeping</td>
<td>802.24</td>
</tr>
<tr>
<td>5024-Banking Fees</td>
<td>10.65</td>
</tr>
<tr>
<td>5026 - Paypal transaction fee</td>
<td>191.71</td>
</tr>
<tr>
<td>5010 Insurance</td>
<td>2,871.00</td>
</tr>
<tr>
<td>5020 Bulletin Printing</td>
<td>4,566.00</td>
</tr>
<tr>
<td>5021 Bulletin Mailing</td>
<td>337.00</td>
</tr>
<tr>
<td>5030-Annual Meeting</td>
<td>8,70</td>
</tr>
<tr>
<td>5030.5-Favors</td>
<td>300.00</td>
</tr>
<tr>
<td>Total 5030-Annual Meeting</td>
<td>308.70</td>
</tr>
<tr>
<td>Total 5059 - Other meeting expense</td>
<td>96.96</td>
</tr>
<tr>
<td>5041 - State Chapter Dues Rebates</td>
<td>4,605.00</td>
</tr>
<tr>
<td>5042 - State Voluntary Donation Rebate</td>
<td>490.00</td>
</tr>
<tr>
<td>5045 - Goetsch property</td>
<td>20,950.93</td>
</tr>
<tr>
<td>5049 Items to Sell</td>
<td>160.45</td>
</tr>
<tr>
<td>TOTAL Expense</td>
<td><strong>64,315.72</strong></td>
</tr>
<tr>
<td>Net Ordinary Income</td>
<td>-30,555.32</td>
</tr>
<tr>
<td>Net Income</td>
<td><strong>-30,555.32</strong></td>
</tr>
</tbody>
</table>
Walnut Council Legacy Fund Update

2020-2023 Fundraising Campaign

Walnut Council just celebrated its 50th anniversary! This campaign is the first step toward assuring a stable future for Walnut Council so that we can assist members to continue their legacy. Donations will go to:

- Help sustain the Walnut Council to maintain a strong organization
- Continue our commitment to share knowledge about walnut and other hardwood management
- Manage current and future Walnut Council property donations as showcases of walnut management

If you are interested in supporting the fund, please contact the office or visit our website for more info at https://walnutcouncil.org/donate/.

Total donations and pledges received as of May 1, 2021 = $71,059

Thank you to these generous supporters of the Walnut Council Legacy Fund campaign to date. We couldn’t have the great organization we have without your support and enthusiasm!

Hickory Level
Albers, Carl W
Albrecht, James D
Anderson, Faith D
Anderson, Odell J
Anonymous (5)
Baird, Greg
Ball, Bob
Barbour, Henry F
Barden, Charles
Bittorf, Joseph D.
Bohler, Donald W.
Braun, Mike
Carlson, Donald G
Christoffersen, Paul
Cole, William C
Crosley, Jackson M.
Crouse, Fred J.
Davis, Annette M.
Davis, Walter R
Diehl, Carl
Eastep, Phillip B
Ebert Farms
Frye, Larry
Gilliland, Ronald L.
Giner, Keith
Gonzalez-Barillas, Rose N
Hall-Reppen, Rich
Halstead, Harry E.
Heck, Ralph D.
Hill, Steven J
Holdridge, Anne
Patrice
Hunter, Kent R., Rev.
Dr.
Johnson Family Trust
Kabrick, John
Katzke, John M.
Kleven, Carolyn
Lawhon, William
Leigh, Robert A.
Marshall, Philip T
Maurer, A Ford
McCune, Philip
McDaniels, Debra
Middleton, James W., Jr., Dr.
Missouri Consulting
Foresters Assn
Moore, Philip K
Neises, Ryan
Osteboe, Harlow
Oxenreider, Stanley
Parker, Dale E
Peskar, Stanley G
Pinkerton, Lester R
Polk, Edward M
Rickert, Michael W
Ring, Merlin
Rodman, Jeffrey J
Ruttan, Derek H
Sawtelle, James
Schultz, Arthur R
Sherman, Gary K
Sieck, Donald R
Suhanic, James M.
Tejcek, JE
Thaler, Steven M.
Thompson, Charles D
Torbert, John
Troyer, Ted
Tuttle, Marvin E.
Van Sambeek, JW
Vice, Harold L
Walton, Kenneth R
Wendleton, Bo
Witte, Daniel R
Yoder Hardwoods

Oak Level
In Memory of
Angerhofer, Donald
ArborAmerica, Inc
Beineke, Walter
Buchanan, John
Chenoweth, Robert T
Jones Family Trust
Nebraska Chapter
Walnut Council
Powell, Dick W
Schmoker, Dan
Seifert, Jack
Smith, Don E
Zimmerschied, Jeff

Cherry Level
Albertson, William
Clark, James T
Cok, Stuart E.
Felt, Stephen J
Goldwater Fund
Illinois Chapter
Walnut Council
Loveland, Squirrel
McCarthy, Mary C
Petersen, Jerald
Sievers, LeRoy
Vogel, Greg

Walnut Level
Anonymous
Hoover, William L.
pollinators to both the flowers and extra-floral nectaries at the base of the leaves, and has weak stems that cause it to lodge and smother other weeds.

Another species to consider adding to any permanent wildflower strip or field border are native milkweeds. Milkweeds are the sole source of food for caterpillars of the monarch butterfly and support a wide range of pollinators with abundant high-quality nectar and pollen. Missouri has 18 species of milkweed that are adapted to a range of soil conditions, so one or more species should be adapted to the soils in a hardwood planting. Common milkweed may be the easiest to establish because it occurs naturally in cultivated fields.

A third option for improving pollinator habitat is interplanting flowering shrubs and small trees within the rows between the trees managed for timber or nuts. In addition to being sources of pollen and nectar, they can also be a source of additional revenue to the landowner if the fruit is harvested. The list of candidate native woody species in the Midwest includes a few leguminous or actinorhizal shrubs capable of fixing atmospheric N. Nitrogen-fixation rates may be relatively low compared to clovers as native nitrogen-fixing trees and shrubs interplanted in a pecan planting failed to increase pecan foliar N concentrations (Van Sambeek, et al. 2016).

If soils are not well drained and are low in organic matter, shrubs will need to be selected that tolerate the accumulation of juglone in black walnut plantings. Pollinator-friendly species tolerant of juglone and their bloom times include witchhazel (Jan-Mar), hazelnuts (Mar-Apr), redbud (Mar-Apr), coyote willow (exceptional source of early spring pollen), service berry (Mar-Apr), plums (Mar-May), peaches (Mar-May), pecan (Apr-May), persimmon (Apr-May), nine-bark (Apr-May), raspberries (Apr-Jun), cherries (Mar-May), pawpaw (Apr-May), sassafras (Mar-May), elderberry (May-Jul), and lilac (May). Because of their sensitivity to juglone, apples (Mar-May), blueberries (Apr-May), grapes, blackberries (Apr-Jun), and basswood (May-June) may not be good choices in a black walnut planting.

**SOURCES FOR ASSISTANCE**

Adding cover crops into a farming operation is estimated to cost between $20 and $50 per acre per year. The 2020 Soil Health Partnership cover crop planting survey report ([http://vit.ly/covercropsurvey](http://vit.ly/covercropsurvey)) indicates the median costs for seed is $15 per acre and to apply it $12 per acre. With a little creative thinking, forest managers can take advantage of several government programs to offset costs associated with use of cover crops and creating pollinator habitat on croplands.

Under the Conservation Reserve Program, the USDA Farm Service Agency plans to enroll nearly 270,000 acres of private lands in a special pollinator-specific initiative. The Monarch Butterfly Habitat Development Project and the Environmental Quality Incentives Program (EQIP) both funded by the USDA-NRCS will provide cost-share funding to landowners to carry out management practices that include both using cover crops and establishment and improvement of pollinator and butterfly habitat.

---

**News and Notes**

**Walnut Council YouTube Channel Has Helpful Videos**

Find video of past webinars at our new Walnut Council YouTube channel, put “Walnut Council” in the YouTube search box or go to [https://www.youtube.com/channel/UCrmJUC4xwLmjZwffzuA4B-HA](https://www.youtube.com/channel/UCrmJUC4xwLmjZwffzuA4B-HA).

Here are a few past videos:

- Economic and Technical assistance sources for management on your land
- Pruning
- Invasive shrub control
- Timber Markets: Looking Forward, Looking Back
- Figure 5. Excellent stand of Kura clover established in a young pecan planting to improve soil health and pollinator habitat.

**Black Walnut book now for sale**

The book “Black Walnut: The History, Use and Unrealized Potential of a Unique American Renewable Natural Resource” by Walnut Council member Bob Chenoweth, is now available for sale for $15 (incl shipping) through the office. Contact [walnutcouncil@gmail.com](mailto:walnutcouncil@gmail.com) to obtain a copy. In 2021 new members receive a complimentary copy as part of their membership (while supplies last).
Is Walnut Diameter Growth Determinate or Indeterminate?

By Jerry Van Sambeek, Retired Plant Physiologist and Agroforester, USDA Forest Service and University of Missouri Center for Agroforestry.

While going through some old files, I ran across an interesting graph Dick Schlesinger created in the 1970’s that I suspect was used as a field handout during an information session between the USDA Forestry Sciences Laboratory staff and executives with the Walnut Council, American Walnut Veneer Association, and the Hardwood Lumberman’s Association. Most of us know that walnut height growth is determinate meaning when the apical buds developed in the fall, the number of leaf primordia formed will be the number of leaves that emerge the following spring. As these leaves mature, the new shoot initiates a new terminal bud and shoot elongation can be complete as early as July. What is not so clear is when does diameter growth cease and the tree switch to storing photosynthates in the roots to be used for growth the next spring.

Notes in the file indicate Bob Phares followed diameter growth on 25 black walnut trees in a CCC planting at the Lee Mines site in Hardin County, Illinois during 1969, 1970, and 1971. Trees were 25 to 30 years old and 6 to 8 inches in diameter. First measurements were made during the week of April 15 (most likely just before budburst) and followed through the week of September 20 (24 weeks later). The original graph plots weeks after April 15 against cumulative diameter growth of the 25 trees (figure 1).

What Bob Phares found was that diameter growth ceased around the 21st week after 15 April in all three years. At this point in the growing season, trees would be actively translocating nitrogen from the leaves and storing photosynthates. For nut production the amount of nitrogen and photosynthates plays a key role in determining how many pistillate flowers are initiated in the apical buds.

CRP Changes

USDA Expands and Renews Conservation Reserve Program in Effort to Boost Enrollment

USDA will open enrollment in the Conservation Reserve Program (CRP) with higher payment rates, new incentives, and a more targeted focus on the program’s role in climate change mitigation. USDA’s goal is to enroll up to 4 million new acres in CRP by raising rental payment rates and expanding the number of incentivized environmental practices allowed under the program.

CRP is one of the world’s largest voluntary conservation programs with a long track record of preserving topsoil, sequestering carbon, and reducing nitrogen runoff, as well providing healthy habitat for wildlife.

To find out more about CRP and see if you qualify to enroll or install new practices, contact your local FSA office at https://www.fsa.usda.gov/state-offices/index.

CRP Forest Management Incentive Program Announced

In addition to the increased CRP signups, the USDA announced additional incentives for practices for those already enrolled in CRP. The 2018 Farm Bill provided for financial assistance to CRP participants with existing tree covers to engage in management activities that improve forest resource condition, promote forest management, and enhance wildlife habitat. Congress authorized up to $12 million in Forest Management Incentive (FMI) funds for this purpose and some of that funding is still available.

If you have CRP acreage and are interested in payments for additional practices, including pruning, brush management (invasive control), or timber stand improvement, contact your FSA office to sign up.
The spotted lanternfly (*Lycomia delicatula*) is an exotic invasive plant hopper (*Hemiptera: Fulgoridae*) native to China, India, Japan, Korea, and Vietnam, and is capable of feeding on over 70 different host species of herbaceous and woody plants (Figures 1 and 2) (APHIS, 2014, Barringer, 2020). Due to its lack of natural enemies, it is considered to be a serious pest. It was first detected in Berks County, Pennsylvania in 2014 and since has spread to counties in Ohio, New Jersey, Virginia, Maryland, and Delaware (Pennsylvania IDA, 2019). The spotted lanternfly (SLF) poses a serious threat to important grape, orchard, and forest industries. Specifically, SLF prefers to feed on a variety of tree fruits and grapes, as well as high value forest tree species (i.e. walnut, oak, poplar, pine) (Figure 4). Feeding by both SLF nymphs and adults reduces the photosynthetic capacity of plants leading to plant stress and attack by secondary organisms (i.e. insects and pathogens) that may contribute to and/or result in plant death. Additionally, SLF feeding results in large amounts of honeydew being produced which facilitates sooty mold growth and attracts other insects.

**Figure 1:** Spotted lanternfly nymph (L) and Adult spotted lanternfly (R)

**SLF Life Cycle.** The SLF has one generation per year (univoltine) with eggs hatching in the spring and early summer. Upon egg hatch, the young nymphs are wingless, black initially developing red patches as the nymphs mature, and have white spots on their body and legs (Figures 1 and 3). Adults begin appearing in July through August, are large (1-inch-long and ½ inch wide) with black legs and head, yellow abdomen, and light-brown to gray forewings. The hind wings are scarlet red with black spots. SLF females lay egg masses containing 30-50 eggs that are gray-brown and covered with a shiny grey waxy covering. Adults may be found on tree trunks, stems, and near leaf litter at the base of the tree. Adults are poor flyers, but strong jumpers (Figures, 1, 2, and 3).

**Figure 2: Adult spotted lanternfly**

Tree of Heaven (TOH) (*Ailanthus altissima*), a widespread exotic invasive species, appears to play an integral role in SLF reproduction (Jackson and Gover, 2018). Upon developing into adults, the adult SLFs move to TOH and grape (*Vitis* spp.) to feed which appears to stimulate ovulation (Figure 4) (APHIS, 2014). Egg-laying begins in September and continues through November. The relationship between feeding on TOH and ovulation is not fully understood. Mature adult females lays their eggs in a mass, which resembles a grayish patch of mud, on a variety of objects including smooth bark trees, nursery plants, firewood, landscape materials (i.e. stone, timbers), vehicles, train cars, and other outdoor structures (i.e. storage sheds, camper and boat trailers, swing sets, etc.). Due to their cryptic coloration, the egg masses can be easily overlooked (Figure 3).

**Movement of SLF.** The female SLF prefers to lay her eggs on a variety of objects and surfaces and as seen with other previous invasive exotic insect pests (i.e. EAB and gypsy moth), human transport and egg laying habits greatly facilitate the long distance movement of SLF, potentially leading to new infestations. For example, in a recent study by Wolfin et al. (2019) they observed large number of male and female adult SLFs attaching themselves to slow moving rail cars suggesting that long-distance transport from current infestations to non-infested areas is highly probable. Therefore, early detection of the SLF is essential in managing and slowing the spread of this invasive insect.

**Management of SLF**

**Stop the Spread.** When traveling in and out of the quarantine zones, be sure to check your car and outdoor equipment (grills, outdoor furniture, landscaping supplies,
mowers, etc.) for SLF egg masses from late fall to early spring. Remember that egg masses may be underneath your car or in your wheel well. During all other times of the year, check for nymphs and adults (Leach et al., 2019).

**Host Removal.** Tree-of-heaven (*Ailanthus altissima*), a preferred host of SLF, is an invasive plant, but is common in landscape plantings and disturbed areas, such as along the sides of roads walking paths, bike trails, and railroad tracks. Its name comes from the fact that it has rapid growth, can reach up to 100 feet tall and can grow to 6 feet in diameter. The bark of tree-of-heaven is similar to the outside of a cantaloupe. When crushed, the leaves produce a foul odor that many describe as rotten peanut butter. TOH spreads by seed and will also reproduce asexually by producing suckers from the roots which are "clones" of the mother tree. TOH can easily be mistaken for other native species, including black walnut, hickory, and staghorn sumac (Leach, et al., 2019).

Current management efforts are focused on removing this tree by applying an herbicide to the tree from July to September and then waiting at least 30 days before removing the tree. Failure to apply an herbicide will result in re-growth from the stump, even when treated, and multiple applications may be necessary over time to completely kill the tree. TOH trees can get very tall, so seek the help of an arborist or forester if necessary (Leach, et al., 2019).

**Biological Control.** Research by Clifton et al. (2018) has shown that two North American fungal pathogens caused a co-epizootic leading to localized collapse of an outbreak population of the spotted lanternfly (*Lycorma delicatula*), in the eastern United States. The majority of SLFs on tree trunks were killed by the fungus, *Batkoa major*, while dead SLF found on the ground were killed by *Beauveria bassiana*. The future will show whether these two fungal pathogens will be effective in controlling SLF populations during outbreaks or will maintain SLF at low population densities. There are no known natural enemies (i.e. predators, parasitoids) of SLF, but research is ongoing for potential biological control agents (Barringer and Smyers, 2018; Clifton, et al., 2018, Lewis, 2019).

**Egg Mass Scraping.** Walk around your property to check for egg masses on trees, cement blocks, rocks, and any other hard surface. If you find egg masses on your property from September to May, you can scrape them off using a plastic card or putty knife (Figure 5). Scrape them into a bag or container filled with rubbing alcohol or hand sanitizer and keep them in this solution permanently. Egg masses can also be smashed or burned. Remember that some eggs will be laid at the tops of trees and may not be possible to reach (Leach, et al., 2019).

**Chemical Insecticides.** Where SLF populations are heavy, chemical insecticides can be applied. Systemic insecticides work best when applied from July-September. However, systemics can also be applied at other times of year, depending on the application method. For example, a soil drench should be applied earlier in the summer to allow for proper uptake. Systemic insecticides can be applied as a trunk injection, but require specialized equipment and have to be applied by a professional applicator, while bark sprays, soil drenches, and direct sprays to the pest can be applied by homeowners. Products can be found at your local retail stores. Systemic insecticides can work well and have residual activity that lasts from several weeks to several months. Direct sprays of contact insecticides are applied

---

**Key Plant Hosts of SLF and the Times They Can Be Found on These Hosts**

<table>
<thead>
<tr>
<th>Host</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rose (cultivated, multiflora, etc.)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Grape (wild and cultivated)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Tree-of-heaven</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Black walnut, butternut</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>River birch</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Willow</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Sumac</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Silver/red maple</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

**Figure 3: Life cycle of the spotted lanternfly**

**Figure 4: Key SLF host plants when SLF can be found on these hosts**

Continued on page 19
Musings of Members...in this 51st Year of Walnut Council

Members were recently asked to tell us about their experiences in Walnut Council as we look back on 50 years. Here is what they shared:

From Pam Angerhofer: On Father’s Day, June 15, 1969, we had driven from our home in Western Springs, IL, to our farm in Wisconsin to plant walnut trees. Because of time and weather constraints, the tree seedlings had been “heeled in” on an earlier trip in the sandy soil in the shade of a nearly 50-year-old dairy barn. The old dairy farm had been purchased for the sole purpose of planting walnut trees for retirement income. The farm site had been chosen because it was adjacent to the farm owned by my husband Don’s high school buddy, who had relocated from the Chicago neighborhood they shared in their youth.

In the weeks following the heeling in of the trees, Don had been back at his job as a Santa Fe R.R. locomotive engineer, and I had been back to the doctor for a regular prenatal checkup. Our first baby was due in June, but the doctor assured me that I had a ways to go and cleared me to drive to Wisconsin for the day.

At the time, we already had two seasons of walnut plantings behind us and were eager to get that year’s tree order in the ground so that we could turn our attention to the task of mowing around our seedlings in defense against the relentless grasses and weeds that threatened to overcome them. However, I was more seasoned at planting than at pregnancy, and I soon began to feel fairly low. I told Don I thought we should go home.

Looking back, I realize that Don was nobody’s dummy and he was not about to undertake a two-and-a-half-hour drive with a pregnant woman whose doctor had arbitrarily changed her due date because the baby wasn’t as big as he expected. Apparently, Don didn’t “know nuthin’ about birthin’ no baby,” because he insisted that I be seen by a doctor before we started out. I protested every way I knew how: it was Father’s Day, the clinic was closed, the only game in town was the E.R., to no avail. Don was resolute - I had to be examined.

Apparently, I had read too many books that said, “Childbirth is the hardest work you will ever do,” when the hardest work I had ever done was planting 1,100 walnut seedlings by hand in one day. As a result, I did not recognize that what I was feeling had anything to do with childbirth - there was nothing hard about it. But sure enough, our son Peter was born a slight 5-pounder 45 minutes after we left the field for the hospital. Don became a 39-year-old first-time dad on Father’s Day.

National meetings like this 2019 Kansas field tour are a great chance to learn from one another.

Peter grew up in a playpen in the back of our Jeep Waggoner parked in the headlands of our tree fields as we pulled sickle-blade mowers behind 12-horse garden tractors down the rows of walnut seedlings, then saplings. By the time the trees were pole-sized, we had added a daughter, Carissa, to our migratory tribe, but she did not adapt well to the privations of the back of a Jeep, and we had to make other arrangements while we mowed and pruned what became 15,000 planted trees.

On Veteran’s Day 2019, Don, a reluctant draftee veteran, died at age 90 of the effects of a brief bout with leukemia. Probably because we hadn’t the experience to know the importance of what Phil Moore referred to (May 2020) as “location, location, location” and had bought our land to be near a friend rather than for its suitability for walnut trees, Don did not harvest a single tree that he had planted and nurtured for 50-plus years. But today Peter emailed me with a proposal from a forester to begin the marking and marketing of Don’s trees, some of which were planted the day Peter was born.

From Sally and John Ouellette of Wisconsin: The Walnut Council Experience- We purchased our land and planted 10,000 black walnut seedlings in the early 70’s. Our forester recommended the Wisconsin and the National Walnut Councils. The yearly State and National Meetings served us with useful information that we took home and put to good use. The Forestry Departments from Purdue University and other hosting universities supplied special touches. Most of all, we looked forward and enjoy meeting with nice folks from our neighboring black walnut regions. We will continue to be part the Walnut Council in the future.
Part III. Enhancement of Pollinator Habitats within Tree Plantings  

When current growers of cover crops were asked where they purchase their seed, most listed companies specializing in cover crop seeds, followed by agricultural retailers, and then commodity seed dealers. Seed of most agronomic crops like wheat, cereal rye, oats, soybeans, clovers, and ryegrass can usually be purchased from a local farm supplier. Some of these species have been bred to improve their performance as a cover crop such as Fixation balansa clover, AC Greenfix chickling vetch, or grazing corn and are available only from companies that specialize in cover crop seed. I obtained valuable information for this series of papers from several companies that specialize in cover crops. Center Seeds (Minster, OH; http://www.centerseeds.com) is a nationwide distributor of cover crop seeds with a network of dealers located throughout the Midwest (Belcher 2014). Green Cover Seed (Bladen, NE; http://greencoverseed.com) specializes in designing custom seed mixes to match grower’s goals, planting dates, and locations. A search on the internet will produce a list of other dealers that also offer seed for most of the species listed in Table 2.

Most dealers in cover crop seeds have prepared mixtures or can prepare custom mixes designed to address specific soil or grazing needs. Some websites also have decision tools to aid in creating specialized mixes. Whatever dealer you decide to use, be sure to purchase the appropriate seed inoculum(s) for the legumes in the mix. Some companies are featuring an inoculum with a broad mix of rhizobial strains suitable for nearly all the legume cover crops. If possible, purchase inoculums that also contain a mix of endo- and ectomycorrhizae to aid non-leguminous plants in taking up available soil nutrients and increase the effectiveness of rhizobial strains for legumes.

In closing, I want to acknowledge the contribution of numerous growers who have asked questions, discussed these ideas, and pushed me to develop this series of three papers on cover crops and pollinator habitat over the last 40 years. Finally, I wish to express my appreciation to Nadia Navarrete-Tindall, Steve Shifley, Doug Wallace, John Kabrick, Gene Garrett, Harlan Palm, Jim Ball, Bob Ball, and other Walnut Council members for their comments and reassuring me the information compiled here will be useful to landowners wanting to improve tree growth in their hardwood plantings. Note: Sources of information used for this article are located at https://walnutcouncil.org/news/bulletin/.

Spotted Lanternfly (SLP)  

directly to the nymphs and adults or to surfaces where they feed, walk, or congregate, which can include the base of a tree, such as TOH. Systemic pesticides should only be applied to trees when they are actively growing and when there is adequate soil moisture to insure good uptake and distribution. Treatment applications should not be attempted during droughts or when the trees are dormant. To protect pollinators, soil drenches of systemic insecticides should be applied after a tree’s flowers have faded. Soil drench and bark spray applications may take several days or weeks to move throughout the entire tree, so you should not expect immediate kill of SLFs (Leach, et al., 2019). For specific pesticide recommendations for your state, consult your local extension service or regulatory agency. ALWAYS BE SURE TO READ AND FOLLOW LABEL DIRECTIONS when purchasing applying, and disposing of a pesticide, and to determine the method of application, rates, and all PPE requirements.

References Cited and Suggested Readings

Application for Membership

Please add my name to your membership list and advise me of future activities of the Walnut Council.

Name ____________________________________________
Title or Business ___________________________________
Address __________________________________________
City __________________ State ______ ZIP__________
Email ____________________________________________
Phone ____________________________________________
☐ NEW MEMBER  ☐ MEMBERSHIP RENEWAL

☐ Yes, please send me the newsletter as a PDF via email in lieu of a mailed copy.

Please make your check out for the appropriate dues category, as determined by your country or state of origin, listed below.

REGULAR MEMBERS - U.S.A.*
Illinois $50  Maryland $45
Indiana $50  Michigan $50
Iowa $50  Missouri $50
Kansas $50  Ohio $50
Kentucky $50  Wisconsin $50

INTERNATIONAL
Canada $55 US
All Other $55 US

* Includes state chapter dues, national dues alone are $40

OTHER MEMBERSHIP CATEGORIES
Student Member $20
Supporting Member $100
Life Member $700

Donation to the Walnut Council Foundation $__________

I have contacted the following individuals and believe they are interested in becoming members of the Walnut Council. I understand that the Walnut Council will follow up with a formal invitation from our Executive Director.

Name ____________________________________________
Title or Business ___________________________________
Address __________________________________________
City __________________ State ______ ZIP__________
Email ____________________________________________
Phone ____________________________________________

Send information to:
Walnut Council International Headquarters
John S. Wright Forestry Center
1007 N 725 W
West Lafayette, IN 47906-9431

The Walnut Council Bulletin (ISSN 1041-5769) is published three times per year by the Walnut Council, an organization dedicated to advancing knowledge of walnut culture, encouraging the planting of walnut and the management of established walnut, and perpetuating the utilization of all walnut products. A subscription is included in the annual dues paid by members of the Council. Please include old address when sending change-of-address notice. The Walnut Council is a 501 c (3) charitable organization and contributions are tax deductible. Dues payments may also be deductible as an ordinary and necessary business expense, consult your tax advisor. Address all correspondence and information to Liz Jackson, Editor, Walnut Council Bulletin, 1007 North 725 West, West Lafayette, IN 47906. Telephone 765-583-3501, FAX 765-583-3512, or email jackson@purdue.edu.