



SOIL AND WATER CONSERVATION SOCIETY

Healthy Land
Clean Water
For Life

CONSERVOGRAM

The newsletter of the Soil and Water Conservation Society

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74th SWCS International Annual Conference

Wyndham Grand Downtown
Pittsburgh, Pennsylvania
July 28–31, 2019

www.swcs.org/19AC

The Countdown Is On!

The June 19 early bird registration deadline is quickly approaching, and we don't want you to miss out on a \$100 discount on your full conference registration! Visit www.swcs.org/19AC to register. Once your registration is completed, be sure to make your [hotel reservation](#) before the discounted room block ends July 4.

How can you enhance your experience at the 2019 SWCS International Annual Conference?

The SWCS International Annual Conference is a prime opportunity for conservation professionals from around the world to come together to discuss successes and challenges, combat shared obstacles, and accelerate conservation efforts.

Enhance your experience by attending a pre-conference workshop and/or post-conference conservation tour. Both add-ons are an excellent opportunity for unique hands-on learning and will enrich your overall conference experience. Registration for workshops and tours may be purchased in addition to conference registration or as a stand-alone option. For more information about the workshops and tours, visit www.swcs.org/19AC.



74th SWCS International Annual Conference
BRIDGING the DIVIDE:
Uniting Rural and Urban Landscapes for Conservation

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Pre-Conference Workshops

Workshop 1: Introduction to Green Infrastructure: Principles, Applications, and Policies

Sunday, July 28

1:00 PM – 5:00 PM

Instructors: Rohan Lilauwala, Green Infrastructure Foundation; Steven Peck, Green Infrastructure Foundation; Blaine Stand, Green Infrastructure Foundation

Green infrastructure remains largely underutilized by governments as a proven means to achieve multiple objectives. This presentation was developed to describe green infrastructure; identify its many environmental, social, and economic benefits; and provide examples of best practices and policies, applications, and programs that support its implementation. There are several learning objectives: to review and understand the different elements of green infrastructure, to introduce scientific research on performance benefits, and to provide examples of current policies. A key workshop goal is to enable decision makers and local, state, and provincial governments to support communities, private developers, affordable housing advocates, and other stakeholders to create a built environment that is more economically, ecologically, and socially sustainable using living green infrastructure.

Workshop 2: Nutrient Tracking Tool (NTT): A Farm Decision-Making Tool for Water Quality/Quantity Assessment and Trading Programs and a New Interface for APEX Model

Sunday, July 28

1:00 PM – 5:00 PM

Instructors: Ali Saleh, Texas Institute for Applied Environmental Research, Tarleton State University; Mindy Selman, USDA Office of Environmental Markets

The Nutrient Tracking Tool (NTT) is a user-friendly web-based program developed by Texas Institute for Applied Environmental Research (TIAER) staff in collaboration with the USDA.

NTT estimates nutrients (nitrogen and phosphorus), sediment losses, and crop yield from fields (or small watersheds) managed under a variety of cropping patterns and management practices through its linkage to the Agricultural Policy Environmental eXtender (APEX). It also accesses USDA Natural Resources Conservation Service's (NRCS) Web Soil Survey (or user input) and PRISM soil, and weather information. NTT provides producers, government officials, and other users with a fast, efficient, and common method of estimating the nitrogen and phosphorus credits generated from implemented Best Management Practices (BMPs) at the field and small watershed levels. The generated credit can be used for water quality/quantity trading, as well as other water quality and quantity programs. In addition, a new version of NTT (NTT-RE) is designed for researchers and educators and provides an easy-to-use interface to access the APEX

files and program. The information obtained from the tool can help producers to determine the most cost-effective conservation practice alternatives for their individual operations and provide them with more advantageous options to reduce the water contaminant while optimizing their crop production. During this workshop the two versions of NTT and its latest capabilities will be described and demonstrated. This workshop is recommended for everyone, including producers, researchers, educators, government employees, and NGO staff.

Workshop 3: Turning Soils Data into Information: SSURGO OnDemand—Quicker, Easier, Faster

Sunday, July 28

1:00 PM – 3:00 PM

Instructors: Chad Ferguson, USDA NRCS; Jason Nemecek, USDA NRCS

Much of the information collected by USDA Natural Resources Conservation Service (NRCS) soil scientists over the past 100+ years of the National Cooperative Soil Survey is stored in the National Soils Information System (NASIS). The Soil Survey Geographic Database (SSURGO) was developed as the vehicle to deliver soils information from NASIS to users. Even for experienced users, the SSURGO data model can be overwhelming, with almost 100 data tables and 130 relationships. Soil Data Viewer was the original tool available for users to untangle the web of tables and relationships into useful information. While still very functional, Soil Data Viewer has significant limitations. Recently, NRCS Soil and Plant Science Division employees have developed a surrogate Geographic Information System tool to Soil Data Viewer, SSURGO OnDemand. These tools use NRCS web-based services to drastically improve the process, speed, and extent for turning SSURGO data into what users want: soil properties and interpretations. This workshop will guide users through the fundamentals of the SSURGO data model and demonstrate the utility of SSURGO OnDemand in natural resource planning.

Post-Conference Conservation Tours

Tour #1: Agriculture in an Ever-Changing World

Wednesday, July 31

7:45 AM – 5:15 PM

This tour will focus on how producers of agriculture in western Pennsylvania have adapted their farming practices in response to the changing dynamics of the population. The first stop is at a multigenerational dairy, Grassycrest Farms. This large, conventional dairy is continuously adopting new conservation practices to protect soil and water quality and is most recently preparing to install a methane digester to supply electricity to the local community. The second stop features Kingview Meads, producers who appreciate the hard work of honeybees in producing their mead wine. A tour of the idyllic property will reveal how they are working with local beekeeping associations and educating the public about the

importance of pollinators. Following the picnic lunch that will be provided by Freedom Farms (Farm Kings), the tour will proceed through the nearby Amish village of Volant and surrounding farms. The Amish have been located in this area for over 100 years and continue to maintain their distinct lifestyle. The final stop features Ronald Gargas's Organic Beef Farm, which supplies grass-fed beef directly to Pittsburgh through restaurants and CSAs, in addition to local freezer beef sales. Gargas has raised organic products since the early 1980s and has participated in university-sponsored research studies that have explored why grass-fed meats are healthier than grain-finished beef. All these farms are within an hour's drive of Pittsburgh and showcase the different types of agriculture in western Pennsylvania. Agricultural practices and products must continue to adapt to remain relevant and essential in this ever-changing world.

Tour #2: Growing Urban Agriculture in Postindustrial Communities

**Wednesday, July 31
1:00 PM – 5:35 PM**

Urban agriculture is a growing trend in many cities across the country, but its origins trace back to the victory gardens of World War II and the home plots of immigrants hoping to maintain a culture and feed their families. In the Pittsburgh region, where earlier economic downturn left thousands of vacant and abandoned plots of land, many individuals and organizations are reclaiming this legacy and driving it forward as they seek to create small businesses, feed their communities with fresh produce, and educate local residents and new farmers. This tour will start at Grow Pittsburgh's Braddock Farms, a one-acre nonprofit operation in the shadow of an active steel mill. The farm serves a dual purpose: growing produce for local residents of the community and educating youth through apprenticeship programs and workshops. The tour will then travel to the Homewood Historical Urban Farm, where the Black Urban Gardeners and Farmers Co-Op is reclaiming the legacy of black urban agriculture, fighting food apartheid by growing fresh vegetables within the community, and advocating for social change and equitable land policies. Last, the group will visit the new Hilltop Urban Farm, which is the largest urban farm in the United States. Established on the former site of the St.

Clair Public Housing Project, the urban farm is in the pilot year of its Farmer Incubation Program after a season of soil remediation and cover cropping. The farm provides land and training to urban farmers as they seek to grow their businesses and professionalize their operations. Additionally, there is a school garden for nearby students and a newly planted orchard.

Tour #3: Restoration of Impacted Landscapes

**Wednesday, July 31
1:00 PM – 5:35 PM**

Humans have made their mark on the soil and water of southwest Pennsylvania, from the extraction industries of coal and natural gas, to the numerous steel mills of Pittsburgh's industrial heyday, to more recent redevelopment and ex-urban growth. This tour will focus on three projects that have sought to mitigate, remediate, and restore impacted landscapes in creative ways. First, the tour will visit Sygan Road in North Fayette Township, where a municipal project funded by the Allegheny County Conservation District and Pennsylvania's Dirt, Gravel, and Low-Volume Roads Program returned water to a wetland that was desiccated after development upslope shifted drainage patterns. The project creatively captured and redirected spring and stormwater flows through a series of pipes, and also replaced an undersized culvert in an adjacent stream to prevent restrictive and concentrated flow and reduce erosion. Next, the group will tour the Pittsburgh Botanic Garden, where years of native habitat plantings and the creation of a passive treatment system for mine drainage have countered the soil and water impacts of historic coal mining. The nonprofit that manages the site has created a vibrant and ever-growing system with research and educational programs that receives over 300,000 visitors a year. At the final tour stop, attendees will walk along park trails in Pittsburgh's Frick Park and 9-Mile Run. The small (6.5 acre) 9-Mile Run watershed flows into Pittsburgh's Frick Park and continues through a former dump site where 20 million tons of slag, an end-stage waste product from steel production, was dumped between 1922 and 1972. This watershed is home to the largest urban stream restoration project in the country and numerous ongoing restoration efforts by local nonprofits, the City of Pittsburgh, and the 9-Mile Run Watershed Association.



74th SWCS International Annual Conference

BRIDGING the DIVIDE:

Uniting Rural and Urban Landscapes for Conservation

July 28-31, 2019 • Pittsburgh, Pennsylvania

Presenting Sponsor Spotlight: Syngenta

By Jill Wheeler, Head of Syngenta Sustainable Productivity for North America



Jill Wheeler, Syngenta

Consider this: less than 2% of Americans work in agriculture. That means 98% of our population has little or no connection to those who steward our soil and water resources. More importantly, it means most people lack the knowledge and understanding of farming and conservation.

This rural-urban divide is a significant challenge for the conservation community. So it should come as no surprise that while the rural community has done a good job of addressing many production and conservation issues, many outside our industry do not approve of—or trust—our solutions.

Over the past year, Syngenta conducted more than 150 listening sessions around the world to gather insights on sustainable agriculture from a variety of stakeholders: food companies, nongovernment organizations, regulators, policymakers, legislators, consumers, and our own employees. We learned society views innovation as critical to sustainability as well as conservation. We learned we need measurable conservation outcomes at the landscape level to help build trust. We also learned that agriculture, the environment, and society all can benefit when we work together.

As a result, we launched our Accelerating Innovation platform in April that inserts nature, sustainability, and society into the very foundations of our research and development efforts, our core business. This is a fundamental change in how we do business. It means opening up our innovation process to greater transparency, broader input, and shared value, not just for our farmer-customers, but also for nature and society. To assist us along this critical new path, Syngenta has partnered with The Nature Conservancy, an urban-based organization equally dedicated to conservation outcomes. Our multiyear collaboration will focus on promoting soil health, increasing resource efficiency, and protecting habitat in major agricultural regions worldwide.

Just as the conservation community is bridging the divide between urban and rural landscapes, Syngenta is helping bridge the divide between farmers' challenges and society's needs.

I invite you to stop by the Syngenta booth at the Soil and Water Conservation Society Annual Conference in Pittsburgh next month. As the conference presenting sponsor for the fifth year, we are eager to hear about your soil and water conservation efforts and value the opportunity to share information about some of our ongoing initiatives that are helping farmers grow crops more efficiently, while protecting the environment.

Welcome, Autumn!



Autumn Mohler joined the SWCS team in May as our summer 2019 intern. This summer, Autumn is lending support to student chapters and exploring ways to engage the next generation of conservation professionals. She is an undergraduate student at Slippery Rock University studying Geology, Leadership, and Geographical Information Science. Welcome, Autumn!

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Upcoming Events

[Alabama Chapter Annual Meeting](#)

Foley, Alabama
June 19-21, 2019

[North Dakota Chapter: Good Bugs II Workshop](#)

Bismark, North Dakota
June 26, 2019

[SWCS 74th International Annual Conference](#)

Pittsburgh, Pennsylvania
July 28-31, 2019



SWCS is on Instagram!
Follow SWCSNews for inspirational quotes and photos, and feel free to tag us in your conservation shots!



@swcsnews

Career Profile: Patrick O'Neill

Read Patrick O'Neill's full profile [online](#).



Patrick O'Neill, Agronomist and Certified Crop Advisor, Soil Health Services, PBC

Career Sector: Private

Degrees: MS in Soil Science from Washington State University, Pullman; BS in Crop Science from California Polytechnic State University, San Luis Obispo

Briefly describe your career path from college until today. During college I did internships with input sales and crop consulting companies. I studied abroad at Lincoln University in New Zealand for a year. I learned about grazing cropland, which is well researched in New Zealand. Then I came back to the United States and did an internship for three summers with a consulting company based here in Colorado. That's when I fell in love with the San Luis Valley.

After I completed my bachelor's degree, I served as a lay missionary for three years with the Franciscan Mission Service in Brazil. I worked as an agronomist with small-scale farmers. After that, for a year and a half I worked as a coordinator for a community supported agriculture program in Madera, California, on an organic agriculture vegetable farm. Then I came back to Colorado in 2005, and I was living and working in the San Luis Valley doing crop consulting with the same organization I had interned with previously. I worked there until 2015, became a partner and owner in the company, and in 2016 I started my own agronomic consulting business focused on soil health.

What have you done to continue your education and professional development following college graduation?

Each year I attend seminars, conferences, and workshops in the hopes of learning something new. They're mostly focused on technical topics. I don't tend to gravitate toward the latest and greatest technology conferences, because usually the conferences are incredibly focused and there's an inherently high price tag for farmers and ranchers to adopt that technology being highlighted. If the only technology that we avail ourselves to comes at an incredibly high cost, then there's an inherent limitation on how much technology will be adopted, and that impacts what funds may be available to make long-term conservation investments.

How has SWCS impacted your career, or contributed to your continued education and/or professional development? I came to know the Society because of its members like Mike Collins and my wife, Cathy O'Neill, both of whom were active in my region and doing work in the realm of soil health. Through their activity and

passion for conservation I became involved. The work of the Society in our region has become more diverse in recent years—we've become more engaged in soil health. Because the Society has taken up the mantra of soil health, that's really increased my engagement. I attend local chapter events and am the President Elect for the Colorado Chapter.

What is the job outlook for your current position in the future? Also, what changes in required skillsets do you anticipate? I think the opportunities are increasing. It may not look the same as the model I followed and worked under, but certainly the knowledge on soil health and how to develop healthier soils is needed. If students are aware of those principles, no matter what they bounce into, it will serve them well and be a good grounding for whatever job they land.

In terms of skillsets, we tend to talk about crops, soils, and water in silos without understanding that they are inherently linked. Most of the formal training that I've been exposed to has glossed over or ignored entirely the very real connection between how we manage the land and how that effects the functioning of our water cycle. Much of our soil and crops training doesn't touch on resiliency. If you're being trained in traditional agronomy, soil or crop science, the ecological component, how things fit together, the idea of resilience, really doesn't surface very often. And that is a shortfall.

An example here in Colorado, in my region we have to think intensely about aquifer recharge because over time we've depleted our aquifer resources. So we have a mandate by state law to recover our aquifer to what is deemed a sustainable level. To do that we need to change the way we farm and treat livestock to accommodate a lesser demand on our aquifer system. But adapting to this we've had a lot of growing pains in trying to figure out the best way to be financial viable in the new system, and our way of thinking, where we specialize in one topic, has made it harder to adjust to a more inclusive interconnected thought process.

What advice do you have for college students or early career professionals who might want to work in a job similar to the one you have right now? Find a place that captures your imagination, someplace where you feel like you can do good and work on something bigger than yourself. If you're not grounded in some place, in some landscape, in some community, then it's really easy to make recommendations to farmers and ranchers and not be mindful of the long-term impacts down the road. We've got a lot of people who tend to float around indefinitely and don't get integrated into a community, and that's to the detriment of agriculture and soil because it takes time for a person to learn how the land functions.

Science and Policy News

Below you will find a list of some of the latest conservation science and policy news. Links to full articles on the different subjects are included.

- The Gulf of Mexico's '[Dead Zone](#)' could balloon to over 8,000 square miles this summer
- Trump Administration to move [Economic Research Service \(ERS\) and National Institute of Food and Agriculture \(NIFA\)](#) to Kansas City area
- [NIFA](#) employees vote to unionize on heels of USDA relocation
- Senators call on USDA to incentivize [cover crops](#)
- Landmark farm rule aims to protect [Minnesota's](#) drinking water
- Low interest rates, increased uncertainty influence [land market](#)
- Farmers on [drenched](#) land confront tough choice on planting
- Canada announces plans to ban single-use [plastics](#) starting in 2021 at the earliest
- Midlands lawmakers hail decision to allow year-round sales of gasoline mixed with 15% [ethanol](#)
- Fall [Armyworm](#) threatens China after ravaging crops in Africa
- [US Environmental Protection Agency](#) (USEPA) exempts farms from reporting pollution tied to animal waste
- Trump Administration proposes easing rules on [genetically engineered](#) crops
- [Honeybees](#) don't need to be "saved"
- [North Carolina](#): Bill advances on hemp, hogs, shooting, and biogas
- House advances \$24 billion agriculture [bill](#)
- The [Colorado River's](#) biggest challenge looms
- Soybean Outlook – Soybeans vs. [prevent plant](#) corn
- How one US state is helping to create value with farm [data](#)
- [Cover crop](#) decision tool coming to Northeast

The opinions expressed in these articles are meant to keep SWCS members informed of current conservation conversations and do not necessarily represent the views of SWCS.

Conservation NewsBriefs: Popular Articles from May



Are you up-to-date with news about soil and water conservation research and policy? *Conservation NewsBriefs* is a highly informative e-news brief that delivers the most relevant content to your inbox each and every Thursday. Below are links to some of the most read articles from the past month:

- [Conservation agriculture: Savings, soil and realities of farming](#) (AgWeb)
- [Soil erosion washes away \\$8 billion annually](#) (Forbes)
- [A middle path to sustainable farming](#) (Knowable Magazine)
- [Fix the broken food system in 3 steps](#) (Nature)
- [Permafrost collapse is accelerating carbon release](#) (Nature)

[Click here](#) to sign up and start receiving your weekly *Conservation NewsBriefs* today!

New Members

Welcome members who joined in May!

California/Nevada

Sheila Crawford Bunch
Devon Snyder

Canada—Manitoba

Fangzhou Zheng

Colorado

Grace Miner

DC—National Capital Chapter

Erin Foster West

Florida

Redjino Mompremier

Iowa

Craig Clarkson
Peggy Rash-Daniels
Linda Shenk
Dan Voss
Stacey Weets

Iowa—Iowa State University Student Chapter

Gabe Hammen

Illinois

Alex Belisle
Kayla Rayburn

Indiana—Purdue University Student Chapter

Anurag Srivastava

Kentucky—Bluegrass

Brad Lee

Minnesota

Veronica Lundquist

North Carolina—Hugh Hammond Bennett

Emily Johnson

New York—Empire State

Jordan Clements

Ohio—All Ohio

Haley Kujawa
Callia Tellez

Ohio—Ohio State University TerrAqua Student Chapter

Christine Charles

Oklahoma

Joe Freeland

Oklahoma—Oklahoma State University Student Chapter

Tanner Wofford

Pennsylvania—Keystone

Eric Rosenbaum
Katie Turner

Virginia

Alexis Villacis

Wisconsin—University of

Wisconsin-Platteville

Student Chapter

Wrangler Jones
Anastasia Kurth
Shannon Lamb
Audrey Pelikan

Wisconsin

Brianna Hall
Karlee Ketelboeter

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