



One World, Connected through **CONSERVATION**

July 26-28 | Virtual Event **2021**
www.swcs.org/21AC

FINAL PROGRAM

JOIN THE EVENT PLATFORM!

#1 Join the event by copying and pasting <https://app.socio.events/OTg4NQ%3D%3D/overview> within a Google Chrome or Firefox web browser

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#2 Download the official SWCS mobile app for iOS or Android by searching for SWCS in the app store

- Once the app is installed, enter the email address you used to register
- Create or enter your password; select “forgot password” to reset if needed
- Under “Current & Upcoming Events,” select “76th SWCS International Annual Conference”



**Biodiversity is essential
for crop diversity. We are
committed to partnering
with stakeholders across
the value chain to help
enhance pollinator
health and promote good
stewardship practices
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stewardship resources at BeeHealth.org**

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CONFERENCE PROGRAM

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JOIN THE CONVERSATION!



#SWCS21
@SWCSNEWS

CONFERENCE SCHEDULE IN BRIEF

Times listed below are Central Time.

All sessions are included with conference registration, unless otherwise indicated.

MONDAY, JULY 26

9:00 AM – 11:00 AM	State of the Society Address to the House of Delegates and Regional Sessions (For Current and Prospective Chapter Leaders and Members)
11:00 AM – 11:15 AM	Break
11:15 AM – 12:45 PM	Climate Change Mitigation and the Role of Working Lands
12:45 PM – 1:00 PM	Break
1:00 PM – 3:30 PM	*Workshop: Training on use of the Predictive-Soil Health Economic Calculator (P-SHEC) Tool to Conduct Assessments of the Potential Short-Term and Long-Term Economic Effects of Soil Health Practice Adoption by On-the-Fence Farmers
1:00 PM – 3:00 PM	ARCSE Annual Meeting (Partner Event)
1:00 PM – 4:00 PM	Student, Professional, and Chapter Development Sessions
1:00 PM – 4:00 PM	CEAP Watershed Assessment Studies Annual Meeting (Partner Event)
4:00 PM – 5:00 PM	Evening Social
4:30 PM – 6:30 PM	WiN Annual Meeting (Partner Event)

**Not included in conference registration. Additional fees apply. Registration by July 16 was required.*

TUESDAY, JULY 27

8:00 AM – 9:00 AM	Coffee and Conversation Open Networking Hour
9:00 AM – 10:45 AM	SWCS Conference Opening, Syngenta Keynote Sponsor, and Pritchard Keynote Lecture
10:45 AM – 11:00 AM	Morning Break
11:00 AM – 12:30 PM	Concurrent Sessions (See pages 24-26)
12:30 PM – 1:00 PM	Lunch Break
1:00 PM – 2:30 PM	Concurrent Sessions (See pages 24-26)
2:30 PM – 3:00 PM	Afternoon Break
3:00 PM – 4:30 PM	Concurrent Sessions (See pages 24-26)
4:30 PM – 5:30 PM	Evening Social

WEDNESDAY, JULY 28

8:00 AM – 9:00 AM	Morning Social
9:00 AM – 10:45 AM	Opening Remarks, Address from USDA NRCS, and Plenary Session
10:45 AM – 11:00 AM	Morning Break
11:00 AM – 12:30 PM	Concurrent Sessions (See pages 38-40)
12:30 PM – 1:00 PM	Lunch and Learn Open Networking
1:00 PM – 2:30 PM	Concurrent Sessions (See pages 38-40)
2:30 PM – 3:00 PM	Afternoon Break
3:00 PM – 4:30 PM	Concurrent Sessions (See pages 38-40)
4:30 PM – 5:00 PM	Conference Wrap-Up

PROGRAM PLANNING COMMITTEE CHAIR MESSAGE

Welcome to the 76th International Annual Conference of the Soil and Water Conservation Society (SWCS). This is our second virtual conference as we come together from our workplaces and homes to celebrate this year's focus of "One World, Connected through Conservation." This theme highlights the collective efforts required to protect and sustain our soil and water resources. While conservation challenges brought on by universal pressures like climate change may produce wide-ranging effects in our respective corners of the globe, there is commonality in the solutions, in collaborations that span sectors, disciplines, and governance structures, putting to use practices informed by science, cutting-edge technology, a new era of policy, and, at the center of all this, individuals working tirelessly to protect and improve our natural resources.

The virtual conference starts Monday, July 26, with an important conversation on climate change mitigation and working lands, workshops, development sessions, and partner annual meetings. On Tuesday, July 27, the SWCS Conference Opening session will begin the day with the Syngenta Sponsor Keynote Address and Pritchard Keynote Lecture, and on the morning of Wednesday, July 28, USDA leadership and a panel on outcome driven conservation will address the attendees. Throughout the conference, symposia, oral presentations, and poster presentations will explore the key issues conservationists face and work to solve, as well as four special topics: (1) 3, 2, 1 ... ACTION!, (2) Adapting Landscapes to Climate Change, (3) Justice, Equity, Diversity, and Inclusion, (4) One World, Connected through Conservation.

I have the honor of being program planning committee chair and have been impressed by the quality, breadth, and diverse disciplines of the 2021 submissions. Our virtual platform will open doors to over 140 symposia, oral presentations, and posters; this work represents a range of important topics for conservationists from protecting water quality to maintaining and enhancing our soil resources. SWCS continues to represent the best in conservation practice and inquiry. The mobile app and event platform makes it easy to ask presenters questions, connect with other attendees, and reach out to old friends.

This conference is only made possible by the many member volunteers and sponsors who have freely given their time and talents. I extend a deep gratitude to the staff of SWCS who have worked so hard in this anomaly of the past year and to the planning committee for their contributions. Thanks to all who have helped make this a successful conference, and I wish Skye Wills all the best as she assumes the chair for the 77th annual conference next year.

I hope you enjoy your time during the virtual conference and come away inspired and with new concepts and understandings to help protect our water and soil resources!



Katie Flahive (she/her), 2021 Program Planning Committee Chair
United States Environmental Protection Agency, Office of Water

CONFERENCE VOLUNTEERS

ANNUAL CONFERENCE PROGRAM

PLANNING COMMITTEE

Katie Flahive, US Environmental Protection Agency
Chair

Skye Wills, USDA NRCS
Incoming Chair

Courtney Allen, SWCS
*Event and Professional Development Director/
Executive Assistant to the CEO*

Cheryl Simmons, USDA NRCS
International Committee Liaison

Gretchen Sassenrath, Kansas State University
JSWC Editorial Board Liaison

Rebecca Fletcher, Retired
*Professional and Chapter Development
Committee Liaison*

Andrew Sharpley, University of Arkansas
Science and Policy Committee Liaison

Francisco Arriaga, University of Wisconsin-Madison
Soil Science Society of America Liaison

TECHNICAL TEAM LEADERS

Maysoon Mikha, USDA ARS

- *Adaptive Management of Conservation Efforts*
- *Adapting Landscapes to Climate Change*

Andrew Sharpley, University of Arkansas
• *Conservation Economics and Policy*

Deanna Osmond, North Carolina State University
• *Conservation in Organic, Specialty, Small-Scale, or
Urban Agriculture*
• *Adapting Landscapes to Climate Change*

Skye Wills, USDA NRCS
• *Conservation Models, Tools, and Technologies*

Heidi Ackerman, Iowa State University
• *Justice, Equity, Diversity, and Inclusion*

Cheryl Simmons, USDA NRCS
• *One World, Connected through Conservation*

Hanna Bates, Iowa Water Center
• *Outreach, Education, and Community Engagement*

Adam Reimer, National Wildlife Federation
• *Social Sciences Informing Conservation*

DeAnn Presley, Kansas State University, and **Peter Tomlinson**, Kansas State University
• *Soil Health Resources, Indicators, Assessment,
and Management*

Katie Flahive, US Environmental Protection Agency
• *Water Resources Assessment and Management*

Thank you to all who assisted
in planning the 76th SWCS
International Annual Conference!

SWCS BOARD OF DIRECTORS, OFFICERS, AND STAFF

OFFICERS

Chair: Dale Threatt-Taylor

Vice Chair: Rebecca Power

Secretary: Jane Hardisty

Treasurer: Rex Martin

NORTHEAST REGION

Ellen Gilinsky 2020–2021

Incoming: Christopher Hartley 2021–2023

NORTH CENTRAL REGION

Rebecca Power 2018–2021

2021–2024

NORTHWEST REGION

Keith Berns 2020–2023

SOUTHEAST REGION

Dale Threatt-Taylor 2019–2022

SOUTHWEST REGION

Steve Kadas 2019–2022

AT-LARGE

Jane Hardisty 2019–2022

Jason Weller 2020–2023

Jerry Hatfield 2020–2023

Rex Martin 2018–2021

Incoming: Ellen Gilinsky 2021–2024

SWCS HEADQUARTERS STAFF

Clare Lindahl, *CEO*

Courtney Allen, *Event and Professional Development Director/Executive Assistant to the CEO*

Annie Binder, *Director of Publications/Editor*

Erika Crady, *Membership and Chapter Coordinator*

Joe Otto, *Project Manager/Historian*

Jordyn Rodriguez, *Student Summer Intern*

Jody Thompson, *Editorial Assistant*

Justice, Equity, Diversity, and Inclusion

The Soil and Water Conservation Society denounces the systemic racism, discrimination, and inequality that exist today. Racism, discrimination, and inequality of any kind go against SWCS's core values, which include respect for people and cultures, and the unification of people with diverse backgrounds, experiences, and ideas. SWCS seeks diverse voices, actively listens, engages in dialogue, thinks critically, and takes meaningful action toward creating institutions and systems that serve and value people equally. Our goals for the world's soil, water, and other natural resources cannot be realized without justice, equity, diversity, and inclusion. We expect justice, equity, diversity, and inclusion to be a component of all projects.

VIRTUAL CONFERENCE PLATFORM INFORMATION

SWCS is excited to be holding its 76th SWCS International Annual Conference virtually! Please find detailed information for conference attendees below. Additional information can be found in the **FAQ** tab of the event platform.

Conference Registration

The conference registration fee covers one participant. Registered attendees will receive exclusive access to the event platform and session recordings after the event.

Note: No refunds will be made for conference registrations, workshops, or special event tickets, including issues due to personal Internet connection problems. Exchange of tickets is not allowed. SWCS reserves the right to cancel events/activities without prior notice.

Join the Event Platform

Join the event by copying and pasting <https://app.socio.events/OTg4NQ%3D%3D/overview> within a Google Chrome or Firefox web browser.

1. Enter the email address you used to register
2. Create or enter your password; select “forgot password” to reset if needed

Download the official SWCS mobile app for iOS or Android by searching for SWCS in the app store.

1. Once the app is installed, enter the email address you used to register
2. Create or enter your password: select “forgot password” to reset if needed
3. Under “Current & Upcoming Events,” select “76th SWCS International Annual Conference”

Technical Assistance

1. First try to troubleshoot by following the below steps:
 - Refresh your web browser or mobile app
 - Try to join via a different browser (Chrome, Firefox, etc.)
 - Try to do a hard reset with your computer, instructions below:
 - On Mac that’s command+shift+R
 - On Windows CTRL+F5

- Clear your cookies
 - Restart your computer or delete and redownload the mobile app
2. Join the **Live Helpdesk** tab within the event platform to contact a Socio representative. You will be placed in a waiting room until the rep is available.
 - Note that you will be required to download Zoom to join the live helpdesk
 - Find your local call-in number: <https://socio.zoom.us/j/abFJGQWZIS>
 3. Contact SWCS via email:
events@swcs.org and erika.cradly@swcs.org
 - Do NOT connect with SWCS staff via the event platform as they will not answer

Please note that we are unable to assist if it is due to a personal Internet connection issue; however, your registration gets you exclusive access to the conference content after the event.

Create Your Personal Profile

Once you have joined the event platform, create an eye-catching personal profile that will put you in touch with the right connections!

Go to the **Me** icon within the event platform to start creating your profile. We recommend that your profile include the following:

- Profile picture
- Title
- Company
- Summary
- Location
- Social Accounts

Note: The creation of your personal profile is required in order for attendees to connect with you.

Set Up Your Personal Agenda

Create your personalized agenda to keep track of the sessions you want to attend!

1. Go to the **Agenda** tab within the event platform
2. Select the “+” sign next to the session you want to attend
3. Once all sessions are selected, go to the “My Agenda” section to see your full list of sessions to attend

Network with Attendees

Once you have created your personal profile, start connecting with attendees!

Go to the **Attendees** tab within the event platform and select “Add” with those you are looking to connect with. You may select “Contact” and message the attendee if they have not created their personal profile. Once the connection has been made, you will have the ability to message or video chat with the individual.

Chat with attendees live during open networking sessions:

1. Go to the **Open Networking** tab within the event platform (this tab will only be open during the session times)

Participate Throughout the Event

Go to the **Event Game** tab within the event platform for instructions on participating in the event game for your chance to win a prize.

Connect with Poster Presenters

Ask questions of this year’s poster presenters!

1. Go to the **Poster Presentation** tab within the event platform
2. Select the poster number you are interested in viewing
3. View the poster under **Attachments**
4. Chat directly with the poster presenter in the **Chat Box** or select “email author” to contact the poster presenter via email with questions, or for more information
5. Chat with them live during conference breaks:
 - Go to the **Chat with Posters** tab within the event platform

Connect with Sponsors

View the sponsor pages and connect with them!

1. Go to the **Sponsors** tab within the event platform
2. Select the sponsor page you are interested in viewing
3. View their provided materials
4. Chat directly with the sponsor rep in the **Chat Box** or select “request follow up” to contact the sponsor rep via email with questions, or for more information
5. Chat with them live during conference breaks:
 - Go to the **Chat with Sponsors** tab within the event platform

Be sure to view the award winners, vote for the photo contest winner, and more!

Photo Release

Registration and attendance at, or participation in, SWCS events constitutes an agreement by the attendee for SWCS to use the attendee’s likeness (all photos, videos, or digital media) in any format without payment or other consideration. SWCS may use the images for nonprofit educational, informational, or promotional purposes. SWCS will not sell the rights to the images or likeness to any other entity.

CEUs

SWCS has worked to secure continuing education credits (CEUs) in the soil and water area. Email events@swcs.org your name and CCA # by **Friday, July 30**. The system will automatically track your attendance when you join and leave the session as you are logged into your personal account for the event.

CORPORATE PARTNERS

SWCS is pleased to have the following organizations as Corporate Partners in the effort to advance soil, water, and related natural resource conservation to achieve sustainability.

PLATINUM PARTNER



GOLD PARTNERS



SILVER PARTNER



BRONZE PARTNERS



Are you interested in having your organization recognized for its dedication to natural resources protection and sustainability? Contact Clare Lindahl through the conference app or at clare.lindahl@swcs.org to discuss all the benefits of becoming an SWCS Corporate Partner.

CONFERENCE SPONSORS

Thank you to our 76th SWCS International Annual Conference sponsors!

Visit this year's conference sponsor pages in the **Sponsors** tab of the event platform to view materials, request follow up, or directly chat with a representative. Be sure to visit the sponsor's live video rooms in the **Chat with Sponsors** tab, available during conference breaks, to directly chat "face to face" with a representative.

PRESENTING SPONSOR



PLATINUM SPONSOR



United States Department of Agriculture

Natural Resources Conservation Service

GOLD SPONSORS



SILVER SPONSORS



BRONZE SPONSORS



STUDENT LEADER DEVELOPMENT SPONSOR



Association Of Retired Conservation Service Employees

SUPPORTER





BECOME A MEMBER OF SWCS

Becoming a member of SWCS will **grow your network**, **increase your visibility** within the conservation profession, and **get you access** to high-quality educational opportunities, training, and technical resources! Learn more about how to receive these and other benefits at www.swcs.org/join.

OUR CORE VALUES

Passion for stewardship and sustainability. We are driven by our desire to help conservationists and land managers identify and implement the best conservation systems to protect soil and water resources and to achieve global sustainability.

Commitment to science. We value and promote the use of data-supported and fact-based science to advance conservation.

Respect for people and cultures. We recognize the success of our mission relies upon people whose cultures and livelihoods are deeply connected to the land as well as consumers of food and fiber produced. We seek conservation solutions that will benefit and improve the quality of life for all people.

Focus on community. We believe our greatest strength lies in uniting people with diverse backgrounds, experiences, and ideas to inspire leadership, collaboration, and innovation within the conservation community.

Promise of integrity. We promise honesty, transparency, and accountability in all interactions with members, partners, and the public as we work to fulfill our mission.

Click to
learn more



JOIN

ABOUT US

RESOURCES

“Successful conservation is complex. No one person or discipline or sector can do it alone. I value SWCS for bringing the necessary voices and know-how together, so we can all learn from one another and be better conservation professionals.”

Rebecca Power, Water Outreach Program Manager at the
University of Wisconsin-Madison Division of Extension and
Director of the North Central Region Water Network

POSTER PRESENTATIONS

Visit this year's posters in the **Poster Presentations** tab of the event platform to view the posters, request follow up, or directly chat with poster presenter. Be sure to visit the poster presenter's live video rooms in the **Chat with Posters** tab, available during conference breaks, to directly chat "face to face" with poster presenters.

Adapting Landscapes to Climate Change

1. Influence of Management and Cover Crop Selection on Early Indications of Change in Soil Health under Organic Agriculture
2. Narrow Rows Are a Potential Management Tool to Increase Grain Yields, Total Biomass, and Water and Nitrogen Use Efficiencies in Irrigated Systems
3. Silvopasture Production Characteristics in the Coastal Plain of North Carolina

Adaptive Management of Conservation Efforts

4. Adaptive Management of Longleaf Pine with Prescribed Burning
5. Native Perennial Grasses as Circular Buffer Strips Improve Green Water Use Proportion in a Center Pivot Irrigation System
6. Pollinator Habitat Establishment on Salt-Influenced Cropland

CIG Showcase

7. Adopt, What? Describing Louisiana Wheat Producers' Level of Adoption of Soil Health Management Practices
8. Assessing the Impact of a White Clover Living Mulch on Hydraulic Soil Properties in Some Georgia Cropping Systems
9. Enhancing Agricultural Production for Native American and Socially Disadvantaged Farmers and Ranchers
10. Evaluating the Effect of Cover Crop on Runoff Water Quality
11. Integrating Conservation Tillage and Summer Cropping into Wheat Production Systems
12. Integrating Cover Crops and Manure: Developing Best Management Practices
13. Maximizing Summer Cover Crop Conservation Benefits for Improved Vegetable Production

14. Nutrient Management Cooperatives in California's Lower Salinas and Monterey Bay: Modelling Partnerships for Improving Water Quality in Irrigated Lands
15. Practical Methods to Assess and Manage Soil Biology on a No-Till Urban Farm
16. Preference towards Nitrogen Forms Differs in Common Fig (*Ficus carica*) and Knockout Rose (*Rosa radrazz*)
17. Revising and Implementing Phosphorus Indices to Protect Water Quality in the Northeastern United States
18. Securing the Future of Highly Productive Organic No-Till Vegetable Cropping Systems in California
19. Small Grains in the Corn Belt: Large Impacts
20. Soil Health on Farms Focused on Forages in North Carolina
21. Trade-Offs between Soil Health and Soil Moisture on Water-Limited Farms in South Texas: Findings of the Subtropical Soil Health Initiative
22. Undertaking Multispecies Cover Cropping Demonstrations in North Carolina
23. Unlocking the Value of Green Infrastructure Incentive Programs for Urban Agriculture by Leveraging Private and Public Investment

Conservation Economics and Policy

24. Ag Retail in Transition: Evaluating a Fee-Based Sustainability Service Model
25. Economics of CP42 Placement in Iowa
26. Farm-Level Optimization and Sensitivity Analysis of Rice Irrigation Decisions in the Arkansas Delta

Conservation in Organic, Specialty, Small-Scale, or Urban Agriculture

27. Soil Carbon and Nitrogen Fractions of Long-Term Farming Systems in the Coastal Plain of North Carolina

Conservation Models, Tools, and Technologies

28. Comparing Ground-Based and Aerial Data at Field Scale during Dry Down on Golf Course Fairways
29. Soil Greenhouse Gas Emissions as Affected by Land Management in Missouri River Floodplains
30. Updating Best Management Practice Nitrogen and Phosphorus Reduction Efficiencies and Assessing Updated Reduction Potentials for Best Management Practices in Iowa Watersheds
31. Utilizing Watershed Models and Tools for Quantifying Environmental Outcomes from Comprehensive Watershed Management Plans in Minnesota
32. Watershed Modeling for Assessing the Impact of CREP on Reducing Agricultural Nonpoint Source Pollution

One World, Connected through Conservation

33. Application of Geographic Information Systems and Best Management Practices to Identify and Ameliorate Erosion from Unpaved Roads in the US Virgin Islands
34. Cacao for Peace Project of Sierra Nevada de Santa Marta, Colombia: A Multifaced Approach to Resource Conservation. Major Findings and Future Perspectives
35. Dynamic Soil Properties: Snapshot in Time for Hanson County, South Dakota

Social Sciences Informing Conservation

36. What Do Farmers and Advisors Need from Their Precision Agriculture Tools? An Investigation into Farm Productivity and Conservation

Soil Health Resources, Indicators, Assessment, and Management

37. Relating Soil Health Indicators to Edge-Of-Field Water Quality in Ohio
38. Soil Health Education for High School Youth
39. Updating Permanganate Oxidizable Carbon Instruction of On-Site Dynamic Soil Property Kit

Water Resource Assessment and Management

40. Adsorption of Fluorescent Labeled *E. Coli* as Affected by Selected Conservation Buffer Systems
41. Automation of Rice Irrigation
42. Do Patterns in Water Quality Impairment of Small Agricultural Streams Change as Spatial Resolution of Sampling Changes?
43. Geochemical Impacts of Infiltration Galleries on Groundwater Quality in a Critical Groundwater Area in Northeastern Arkansas
44. Managed Aquifer Recharge: Installation and Feasibility of Two Infiltration Galleries in Northeast Arkansas
45. Ten-Year Study of Land Use Impact on Drainage Volume in Central Iowa



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SMARTMIX

MONDAY, JULY 26

SCHEDULE AND EVENTS

SCHEDULE

Times listed below are Central Time.

9:00 AM – 11:00 AM	State of the Society Address to the House of Delegates and Regional Sessions (For Current and Prospective Chapter Leaders and Members)
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1:00 PM – 4:00 PM	CEAP Watershed Assessment Studies Annual Meeting (Partner Event)
4:00 PM – 5:00 PM	Evening Social
4:30 PM – 6:30 PM	WiN Annual Meeting (Partner Event)

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SWCS EVENTS

State of the Society Address to the House of Delegates and Regional Sessions (for Current and Prospective Chapter Leaders and Members)

9:00 AM – 11:00 AM CT

SWCS leadership will deliver the State of the Society Address to the House of Delegates. SWCS Regional Directors will lead local discussion with chapter leaders and members in regional virtual breakout rooms. Don't miss this opportunity to guide the future direction of your professional society.

Climate Change Mitigation and the Role of Working Lands

11:15 AM – 12:45 PM CT

Moderator: Jerry Hatfield, SWCS Board Member

Presenters: Gloria Montano Greene, Deputy Under Secretary for Farm Production and Conservation at USDA; Chavonda Jacobs-Young, Acting Under Secretary for Research, Education, and Economics at USDA; Radhika Fox, Assistant Administrator, Office of Water, US Environmental Protection Agency

Climate change mitigation is a top-tier priority of the Biden administration. On inauguration day, the United States rejoined the Paris climate agreement, and President Biden signed an executive order aimed at "protecting public health and the environment and restoring science to tackle the climate crisis." Seven days later, President Biden signed another executive order stating, "It is the policy of my Administration to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach." But what role do working lands play in climate change mitigation in this agency-wide effort? We know that conservation practices on agricultural land can lead to decreased greenhouse gas emissions, improved water quality, healthier soil, greater biodiversity, and more resilient communities. We also understand that conservation practices are critically underadopted. What role should the government play in incentivizing this shift to greater adoption of climate-smart agriculture?



What programs, research, and financial structures are needed to equitably facilitate this shift? This panel brings together leaders from the US Department of Agriculture (USDA), USDA Agricultural Research Service (ARS), and the US Environmental Protection Agency (EPA) to discuss how their agencies are working to achieve a cohesive vision of climate-smart agriculture that assures the continued security of the earth and its people.



Jerry Hatfield, SWCS Board Member

Jerry Hatfield received his PhD from Iowa State University in 1975 in the area of agricultural climatology and is the retired director of the USDA ARS National Laboratory for

Agriculture and the Environment in Ames, Iowa. His research focuses on the interactions among the components of the soil-plant-atmosphere continuum and their linkage to air, water, and soil quality. His focus has been on the evaluation of farming systems and their response to water and nitrogen interactions across soils and remote sensing methods to quantify field variation. He utilizes the genetics × environment × management concept to show producers how they can increase their production efficiency, increase soil health, and develop resilience to weather and climate variation. He is the recipient of numerous awards, including being inducted into the USDA ARS Hall of Fame for his research impact and the SWCS Hugh Hammond Bennett award. He is the author of 498 refereed publications and 18 monographs.



Gloria Montano Greene, Deputy Under Secretary for Farm Production and Conservation at USDA

Gloria Montano Greene was appointed Deputy Under Secretary for USDA's Farm Production and Conservation (FPAC) mission area on

February 22, 2021. Her experience is focused in government and community work and includes federal policy, politics, advocacy, intergovernmental relations, communications, and management. As the FPAC Deputy Undersecretary, Montano Greene leads

agencies that deliver farm programs and services to farmers, ranchers, and agricultural producers. These programs include farm loans, conservation, disaster assistance, crop insurance and price support.

Montano Greene is a former State Executive Director for the Farm Service Agency (FSA) in Arizona from 2014 to 2017. With FSA in Arizona, Montano Greene led implementation of the 2014 Farm Bill programs across the state. She previously served as Deputy Chief of Staff and Chief of Staff to Congressman Raúl M. Grijalva of Arizona. Montano Greene also served as Deputy Director for Chispa Arizona, a program of the League of Conservation Voters focused on the empowerment of Latino voices in Arizona on issues including energy, public lands, and democracy access. Montano Greene is originally from rural Arizona. She is a proud graduate of the University of Arizona.



Chavonda Jacobs-Young, Acting Under Secretary for Research, Education, and Economics at USDA

Chavonda Jacobs-Young is the Administrator of the ARS, USDA's chief scientific in-house research agency, and currently the Acting REE Undersecretary, and Acting Chief Scientist of USDA.

Prior to joining ARS, Jacobs-Young served in several scientific leadership roles including Director of the USDA Office of the Chief Scientist, Acting Director for the National Institute of Food and Agriculture (NIFA), and Senior Policy Analyst in the White House Office of Science and Technology Policy. In these roles she transformed USDA's scientific coordination and made a lasting impact on the conduct, quality, integrity, and access to science for customers. In these roles she also elevated the visibility of agricultural research globally.

Jacobs-Young is a native of Augusta, Georgia. She holds MS and PhD degrees in wood and paper science and a BS degree in pulp and paper science and technology from North Carolina State University. She is also a graduate of American University's Key Executive Program. Jacobs-Young is a Fellow of the American Association for the Advancement of Science (AAAS), a Fellow of the National Academy of Public Administration, an If/Then Ambassador for the AAAS, and a 2016 recipient of the Presidential Rank Award.



Radhika Fox, Assistant Administrator, Office of Water, US Environmental Protection Agency

Radhika Fox is the Principal Deputy Assistant Administrator for the US EPA's Office of Water. The

Office of Water works to ensure that drinking water is safe, wastewater is safely returned to the environment, and surface waters are properly managed and protected. Prior to joining EPA, Radhika served as Chief Executive Officer for the US Water Alliance, Director for Policy and Government Affairs for the San Francisco Public Utilities Commission, and the Federal Policy Director at PolicyLink. Fox has used her 20+ years of experience to address the most salient water issues facing the nation—including climate change, affordability, equity, governance, innovative finance, and the evolution of the One Water movement. Radhika holds a BA from Columbia University and a master's in city and regional planning from the University of California at Berkeley where she was a HUD Community Development Fellow.

PROFESSIONAL AND CHAPTER DEVELOPMENT SESSIONS

1:00 PM – 4:00 PM CT

The professional and chapter development sessions are for the growth of professionals and chapters. This year's professional development session is hosted by Women in NRCS (WiN) and will address the importance of continued education and ways ongoing training and involvement in professional organizations help you grow in your career. SWCS chapters and conservation professionals have continued to implement conservation during the pandemic. During this session, lightning presentations will demonstrate some of the innovative approaches used over the last year to communicate and deliver conservation.

Investing in Yourself

1:00 PM – 2:30 PM CT

Moderator: Brandi Murphy, USDA NRCS and WiN

Presenters: Katrina Thompson, USDA NRCS; Jessica Rock, USDA NRCS; Valerie Hartman, USDA NRCS; Jackie Byam, USDA NRCS; Tiffani Robertson, South Dakota Ag Producer

Communicating Conservation during COVID-19

2:30 PM – 4:00 PM CT

Moderator: Renee Bouldin, Southern New England Chapter

Presenters: Tyler Tran, South Dakota Chapter; Arlene Brandt-Jenson, South Dakota Chapter; Beth Hill, North Dakota Chapter; Shelby Callaway, National Capital Chapter; Brandi Murphy, California Nevada Chapter

STUDENT DEVELOPMENT SESSION

G.R.O.W with SWCS

1:00 PM – 4:00 PM CT

Moderator: Jordyn Rodriguez, SWCS Intern

Presenters: Megan Koppenhaffer, Panhandle Area Development District; Naveen Adusumilli, Louisiana State University; Dale Threatt-Taylor, SWCS Chair and The Nature Conservancy

This interactive workshop will take students through valuable exercises that will show the importance of career development. Students will learn about the history of SWCS, hear from career professionals, be exposed to the opportunities for SWCS student members, and participate in an active listening workshop.

WORKSHOPS

Workshops are not included in conference registration. Additional fees apply. Registration by July 16 was required.

Workshop: Training on use of the Predictive-Soil Health Economic Calculator (P-SHEC) Tool to Conduct Assessments of the Potential Short-Term and Long-Term Economic Effects of Soil Health Practice Adoption by On-the-Fence Farmers

1:00 PM – 3:30 PM CT

Instructors: Michelle Perez, American Farmland Trust; Florence Swartz, Consultant and Retired NRCS-NY Economist; Ellen Yeatman, American Farmland Trust; Sarah Blount, American Farmland Trust

This training session will teach farm conservation professionals to conduct a predictive economic analysis for their farmer clients who are "curious" about soil

health practices, i.e., farmers who are interested, but have not yet adopted soil health practices. The predictive assessment estimates the future costs and benefits (short-term and long-term) associated with adoption of soil health practices. This training will focus on row crop production (corn, soybean, wheat, and hay) and four soil health practices (no-till or reduced tillage, cover crops, nutrient management, and conservation crop rotation).

The heart of the training features a detailed demonstration of the new American Farmland Trust (AFT) Predictive-Soil Health Economic Calculator (P-SHEC) Tool. This Excel-based tool and associated Word-based questionnaire enable conservationists to interview farmers about their interests in one or more soil health practices and to conduct a short-term partial budget analysis and long-term predictive analysis. Results are presented to the farmer in the form of a seven-page Predictive Assessment Summary (PAS) Report. AFT hopes that this service will enable more conservationists to answer economic questions from farmers apprehensive about soil health practice adoption.

The session also includes a presentation of a completed PAS report for a corn-soybean farmer in Illinois who wanted to learn what his potential costs and benefits might be from reducing tillage, adopting cover crops, and adjusting nutrients. Attendees of this training session will receive over a dozen Word- and Excel-based resources to assist their development of their own PAS Reports for farmers.

AFT's SWCS Workshop #1 last year focused on training conservationists to conduct a retrospective economic analysis of "soil health successful" farmers and presenting results as two-page case studies. Nine such case studies have been developed and can be found at <https://farmlandinfo.org/publications/soil-health-case-studies/>. Over 20 resources are available in a Retrospective Soil Health Economic Tool Kit to enable fellow conservationists to conduct their own case studies: <https://farmland.org/soil-health-case-studies-methods/>. In contrast, this year's workshop will (1) share resources in the new Predictive Soil Health Economic Tool Kit, (2) train conservationists to conduct a predictive economic analysis for "soil health curious farmers," and (3) present results of a completed PAS Report. This workshop will be useful to all attendees regardless of whether they attended last year's training.

PARTNER EVENTS

Association of Retired Conservation Service Employees (ARCSE) Annual Meeting

1:00 PM – 3:00 PM CT

The Association of Retired Conservation Service Employees (ARCSE), as last year, will host their annual meeting virtually. The online event will include updates from NRCS and SWCS leadership, SWCS Historian Joe Otto, a focus on incubator farms, and other special presentations. Our primary goal is to network past, present, and next generation conservationists looking forward to the decades of work ahead. Please join us! Registration is free for this event. More information can be found at www.arcse.org.

CEAP Watershed Assessment Studies Annual Meeting

1:00 PM – 4:00 PM CT

Please join USDA's Natural Resources Conservation Service (NRCS) and Agricultural Research Service (ARS) Conservation Effects Assessment Program (CEAP) scientists and university collaborators to learn about and discuss the CEAP Watershed Assessments in small watershed studies. This year's meeting will take place Monday, July 26, 1:00 – 4:00 PM Central Time, prior to the opening of the general SWCS Conference program. Presentations in the CEAP meeting will feature ongoing ARS and university CEAP Watershed Assessments. If you have an interest in outcomes and documenting benefits of conservation, please come provide your input into future efforts!

WiN Annual Meeting

4:30 PM – 6:30 PM CT

The National Organization of Professional Women in Natural Resources Conservation Service (WiN) will be hosting their annual organization meeting via Zoom. From 4:30 PM – 5:00 PM CT there will be an informal meet and greet with the annual meeting starting promptly at 5:00 PM CT. The annual meeting will be used to present the WiN annual awards and go over the highlights of the year. The meeting is open to anyone interested in learning more about WiN. The mission for WiN is "To provide women with training, opportunities, and mentoring to develop into their fullest professional potential."

EVENING SOCIALS

4:00 PM – 5:00 PM CT

Participate in one of the social rooms for interaction amongst learning and dialogue.

Room 1: Conservation and Cocktails: The Role of Art in the American Conservation Movement

Moderator: Lisa Duriancik, National Capital Chapter

Presenters: Shelby Callaway, National Capital Chapter; Mary Pfaffko, National Capital Chapter; Ben the Bar Guy, Murlarkey Distillery

Take a virtual behind-the-scenes tour of an award-winning US distillery and hear about their “100% Farm to Flask” agriculture commitment. Experience a special demonstration from Washington, DC, mixologist and YouTuber, “Ben the Bar Guy,” on creating a special conservation-themed cocktail for SWCS members featuring the local distillery. Learn from NRCS Historian and SWCS National Capital Chapter Officer, Shelby Callaway, about examples of conservation-themed art, including those from

a former Soil Conservation Service fine artist, and some ways art has supported the soil and water conservation movement.

Share a drink and brainstorm with other conservation professionals about the role of art in the past, present, and future of conservation! Be sure to check out and “Like” the video ahead for ingredients and instructions for making this signature cocktail:

<https://youtu.be/744tUj0q4yc>. For more information about Murlarkey Distillery, Top 4 in the United States (Travel and Leisure) and their “100% Farm to Flask Pledge”, visit <https://murlarkey.com/about-us/>.

Room 2: Global Conservation Trivia

Moderator/Presenter: Joe Otto, Soil and Water Conservation Society

Test your knowledge of conservation around the world and find out how much your fellow conservation professionals know during this poll-based trivia hour! Take new ideas back to your work from other countries while learning about international conservation.



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The advertisement features a detailed diagram of the Agri Drain Smart Drainage System. It shows a cross-section of a drainage pipe installed in the ground. A multi-level valve with a power control unit is shown inside the pipe, with labels for 'LEVEL 1' and 'LEVEL 2 (ADJUSTABLE)'. A 'POWER ACTUATOR' is connected to the valve. A 'WEATHER-PROOF ENCLOSURE FOR BATTERY & CONTROLLER' is shown on the surface, connected to a 'SOLAR PANEL'. A 'WATER LEVEL SENSOR' is also shown, connected to the system. The diagram illustrates the system's ability to control water levels in a drainage pipe.

Monday, July 26, 2021
All Times Listed in Central Time

	SWCS Events	
9:00 AM - 11:00 AM	State of the Society Address to the House of Delegates and Regional Sessions (for Current and Prospective Chapter Leaders and Members)	
11:00 AM - 11:15 AM	Break	
11:15 AM - 12:45 PM	Climate Change Mitigation and the Role of Working Lands - Jerry Hatfield, <i>Soil and Water Conservation Society Board</i> ; Gloria Montañó Greene, <i>Deputy Under Secretary for Farm Production and Conservation at USDA</i> ; Chavonda Jacobs-Young, <i>Acting Under Secretary for Research, Education, and Economics at USDA</i> ; Radhika Fox, <i>Assistant Administrator in the US Environmental Protection Agency Office of Water</i>	
12:45 PM - 1:00 PM	Break	
1:00 PM - 4:00 PM Professional and Chapter Development Sessions	1:00 PM - 2:30 PM Investing in Yourself - Brandi Murphy, <i>USDA NRCS</i>	2:30 PM - 4:00 PM Communicating Conservation during COVID-19 - Renee Bouldin, <i>Southern New England Chapter of SWCS</i>
1:00 PM - 4:00 PM Student Development Session	G.R.O.W with SWCS - Jordyn Rodriguez, <i>Soil and Water Conservation Society Intern</i>	
4:00 PM - 5:00 PM Evening Social	<u>Room 1</u> Conservation and Cocktails: The Role of Art in the American Conservation Movement - Lisa Duriancik, <i>National Capital Chapter of SWCS</i>	<u>Room 2</u> Global Conservation Trivia - Joe Otto, <i>Soil and Water Conservation Society</i>
	Workshops	
1:00 PM - 3:30 PM	Training on Use of the Predictive-Soil Health Economic Calculator (P-SHEC) Tool to Conduct Assessments of the Potential Short-Term and Long-Term Economic Effects of Soil Health Practice Adoption by On-the-Fence Farmers - Michelle Perez, <i>American Farmland Trust</i> ; Florence Swartz, <i>Consultant and Retired NRCS-NY Economist</i> ; Ellen Yeatman, <i>American Farmland Trust</i> ; Sarah Blount, <i>American Farmland Trust</i> (Additional Fees Apply, Registration by July 16 Required)	
	Partner Events	
1:00 PM - 3:00 PM	Association of Retired Conservation Service Employees (ARCSE) Annual Meeting	
1:00 PM - 4:00 PM	CEAP Watershed Assessment Studies Annual Meeting	
4:30 PM - 6:30 PM	WiN Annual Meeting (Meet & Greet Social from 4:30 PM - 5:00 PM and Annual Meeting from 5:00 PM - 6:30 PM)	

TUESDAY, JULY 27

SCHEDULE AND EVENTS

SCHEDULE

Times listed below are Central Time.

8:00 AM – 9:00 AM	Coffee and Conversation Open Networking Hour
9:00 AM – 10:45 AM	SWCS Conference Opening, Syngenta Keynote Sponsor, and Pritchard Keynote Lecture
10:45 AM – 11:00 AM	Morning Break
11:00 AM – 12:30 PM	Concurrent Sessions (See pages 24-26)
12:30 PM – 1:00 PM	Lunch Break
1:00 PM – 2:30 PM	Concurrent Sessions (See pages 24-26)
2:30 PM – 3:00 PM	Afternoon Break
3:00 PM – 4:30 PM	Concurrent Sessions (See pages 24-26)
4:30 PM – 5:30 PM	Evening Social

SWCS Conference Opening, Syngenta Keynote Sponsor, and Pritchard Keynote Lecture

9:00 AM – 10:45 AM

The Tuesday general session will be opened by CEO Clare Lindahl. This year's presenting sponsor, Liz Hunt from Syngenta, will address the audience, followed by the Pritchard Keynote presenter Jim Richardson.

Moderator: Clare Lindahl, Soil and Water Conservation Society

Presenter: Jim Richardson, Photographer, National Geographic Magazine

Perhaps no one has captured the beauty, intricacy, and connection humans have with soil, water, and plants as vividly as Jim Richardson through his work as a photographer with *National Geographic Magazine*. His quest to explore the challenges of feeding a hungry planet has taken him around the world several times over the last 20 years to cover stories of food, farmers, and the vast problems and possibilities before us. From the tops of volcanic peaks to below the surface of the soil, from the Arctic to the Antarctic, and most places in between, Richardson's work has enabled him to meet farmers around the world, grasp the challenges and innovations that lie ahead of us, and collect small town lessons of agrarian community survival.

Few have been given such an opportunity to see the breadth of the world's agriculture and natural resources. During this session attendees will have the chance to experience the big picture of agriculture and environment on our planet. There is value in stepping back and discovering the important global connections our local work in conservation and agriculture has. Be transported around the world with Richardson's spectacular photography and storytelling. Be enriched, entertained, and encouraged.

EVENTS

Coffee and Conversation Open Networking Hour

8:00 AM – 9:00 AM CT

Join your fellow conference attendees in one of our many open networking rooms. These rooms offer time for networking and interaction among one another. Join in with your cameras turned on! These rooms can be found under the Open Networking tab within the platform.



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***Be transported around the world with Richardson's spectacular photography and storytelling.
Be enriched, entertained, and encouraged.***

Jim Richardson is a photographer for *National Geographic Magazine* and a contributing editor for its sister publication, *TRAVELER* magazine. Richardson has photographed more than fifty stories for *National Geographic*.

Richardson's work takes him around the world, from the tops of volcanic peaks to below the surface of the soil that provides our food, from the Arctic to the Antarctic, and most places in between. ABC News Nightline produced a story about the long process of assembling a *National Geographic* coverage by following Richardson in the field and at National Geographic Society headquarters in Washington, DC.



In addition to his color photography, Richardson has built a distinguished body of black-and-white documentary work about rural Kansas life. His audiovisual presentation, "Reflections From a Wide Spot in the Road," has toured internationally. His 40 years of photographing life in the Kansas town of Cuba, population 230, was published in *National Geographic* and featured twice by CBS News Sunday Morning, most recently in May 2004. His 1979 study of adolescence, "High School USA," is now considered a photo essay classic and is used in college classrooms. He was named Kansan of the Year in 2007 by the Native Sons and Daughters of Kansas. In 2015 he was honored by his fellow *National Geographic* photographers as their "Photographer's

Photographer." And in 2017 Kansas State University bestowed an honorary doctorate for his work in cultural and environmental communications. He is co-founder of Eyes On Earth, an educational collaborative seeking to inspire next generation environmental photographers.

Richardson speaks nationally and internationally. He lives in Lindsborg, Kansas, where his work is featured at his gallery, Small World, on Lindsborg's Main Street.



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EVENING SOCIAL

4:30 PM – 5:30 PM CT

Participate in one of the social rooms for interaction amongst learning and dialogue.

Room 1: Conservation around the World

Moderator: Annie Binder, Soil and Water Conservation Society

Presenters: Charles Kome, USDA NRCS; Mohammad Golabi, University of Guam; Susan Kubo, USDA NRCS

Tour the globe and see conservation from around the world. During this social, researchers and practitioners will share images and experiences from their conservation work through five-minute Ignite presentations. Explore conservation through the lens of multiple different landscapes and discover what we can learn from our neighbors. Highlighted during this session will be conservation within the island environments of Guam, Haiti, and Hawaii.

We invite you to add your experiences to the SWCS global conservation discussion! To hear from fellow conservationists around the world and add your perspective, follow the links below:

Conservation Success

What is one soil or water conservation success that you've had?

- <https://flipgrid.com/03cc8bd6>
- Flipgrid App: **03cc8bd6**
- Use the guest passcode: **swcs2021**

Global Awareness

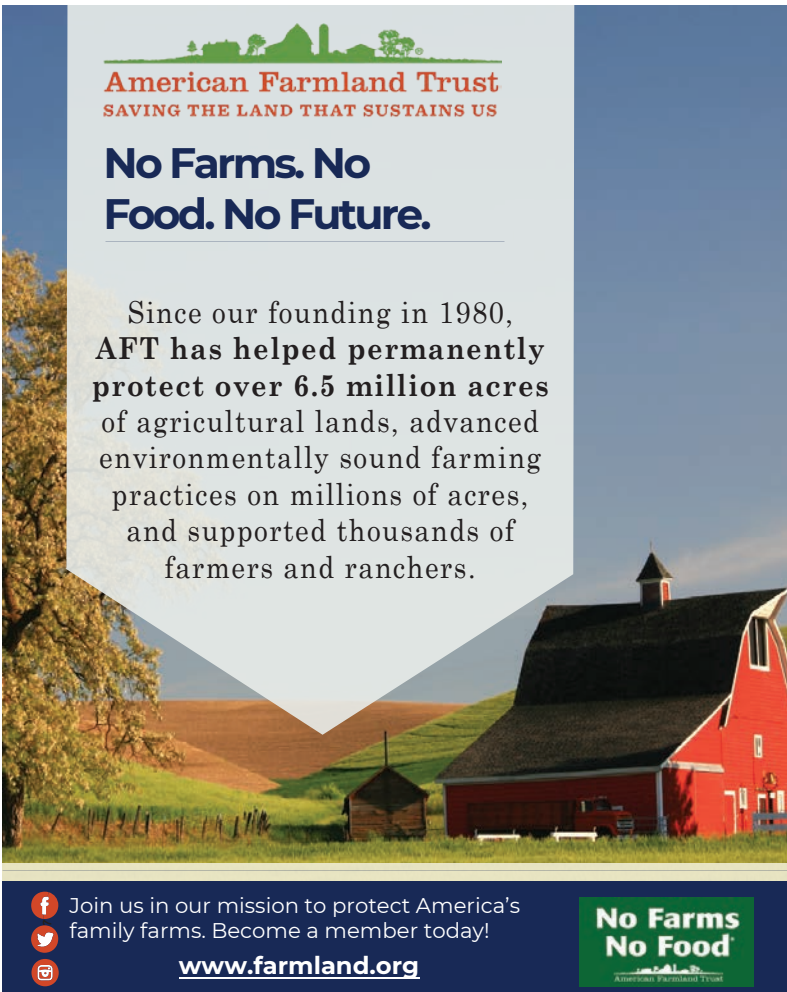
What do you want people beyond your region to know about your landscape or natural resources?

- <https://flipgrid.com/34109138>
- Flipgrid App: **34109138**
- Use the guest passcode: **swcs2021**

Room 2: Two Hughs and a Lie: International Edition

Moderator/Presenter: Joe Otto, Soil and Water Conservation Society

Hugh Hammond Bennett, the father of America's soil conservation movement, had a profound impact on conservation around the world, as well as some incredible experiences and tales. Play Two Hughs and a Lie in which SWCS Historian Joe Otto will share stories with attendees about Society founder Hugh Hammond Bennett's international experiences. Attendees will be able to use polling to weigh in on the accuracy of the stories presented. See just how much you and your colleagues know about the father of soil conservation.



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Tuesday, July 27, 2021
All Times Listed in Central Time

8:00 AM - 9:00 AM	Coffee and Conversation Open Networking Hour			
9:00 AM - 10:45 AM	SWCS Conference Opening - <i>Clare Lindahl, Soil and Water Conservation Society</i> ; Keynote Sponsor - <i>Liz Hunt, Syngenta</i> ; Pritchard Keynote Lecture - <i>Jim Richardson, Photographer, National Geographic Magazine</i>			
10:45 AM - 11:00 AM	Morning Break			
11:00 AM - 12:30 PM	Symposia Sessions			
Conservation Innovation Grants Showcase	Conservation Innovation Grants Program Overview and Stakeholder Updates and Improving Soil Health Around the USA - <i>Caroline Sherony, USDA NRCS</i>			
3, 2, 1 ... ACTION!	90 Cover Crops in 90 Minutes - <i>Keith Berns, Green Cover Seed</i>			
Conservation Models, Tools, and Technologies	A Walk Through the "Guide to Outcomes Estimation Tools," a Dive into a Do-It-Yourself Method to Estimate Water Quality Outcomes, and Helpful Tips from the Leading Tool Developers - <i>Michelle Perez, American Farmland Trust</i>			
Justice, Equity, Diversity, and Inclusion	Diversity: Connected through Conservation - <i>Katrina Thompson, USDA NRCS</i>			
One World, Connected through Conservation	Edge of Field in Action: A Discussion on Edge of Field Practices from Roadmap to Implementation - <i>Kris Johnson, The Nature Conservancy</i>			
Soil Health Resources, Indicators, Assessment, and Management	Tools to Plan and Evaluate Soil Health Management Systems for Carbon Sequestration - <i>Rachel Seman-Varner, USDA NRCS</i>			
11:00 AM - 12:30 PM	Oral Presentations			
	11:00 AM	11:23AM	11:46 AM	12:09 PM
Adapting Landscapes to Climate Change	An Ecohydrological Assessment of Potential Impacts of Climate Change on Herpetofauna in the Connecticut River Watershed - <i>Timothy Randhir, UMass Amherst</i>	Climate Indicators and Adaptation Strategies in the Long-Term Agroecosystem Research Network - <i>Lindsey Yasarer, USDA ARS</i>	Legacy Sediment 2.0: Enhanced Mapping and Decision Support Tool - <i>Joseph V. Sweeney, Water Science Institute</i>	Recycling Drainage Water for Increased Resilience and Improved Water Quality - <i>Chris Hay, Iowa Soybean Association</i>
Conservation Models, Tools, and Technologies	Combining Research with Community Wisdom to Help Secure a Vibrant and Healthy Future for People and Wildlife - <i>Craig Fergus, Smithsonian Conservation Biology Institute</i>	Do Cultural Ecosystem Services Matter in Wetland Protection? A Delphi Survey Approach - <i>William Kleindl, Montana State University</i>	LiDAR Based Hydro-Conditioned Hydrological Modeling for Conservation Practice Placement in Agroecosystems - <i>R. Srinivas, Birla Institute of Technology and Science, Pilani</i>	
Outreach, Education, and Community Engagement	Creating a Regionally Appropriate and Representative Soil Health Workbook: Best Practices and Examples - <i>Eva Stricker, Quivira Coalition</i>	Farm Connect Tool - <i>Stephen P. Bontekoe, Limestone Valley RC&D</i>	Understanding Differences in the Attendance of Adopters and Nonadopters of Agricultural Conservation Practices at Outreach Events - <i>Anil K. Kumar Chaudhary, The Pennsylvania State University</i>	Whole Farm Conservation Best Practices Manual - <i>Matthew Helmers, Iowa State University</i>
Water Resource Assessment and Management	Examining Sources and Pathways of Phosphorus Transfer in a Ditch-Drained Field - <i>Anthony Buda, USDA ARS</i>	FloodWise: Using Natural Resources Infrastructure for Flood Reduction for Farms and Communities in Eastern North Carolina - <i>Meredith Hovis, North Carolina State University</i>	Lessons Learned from the Polk County Saturated Buffer Project: One Hit Wonder or Multiple Tours? - <i>Keegan J. Kult, Ag Drainage Management Coalition</i>	Mapping On-Farm Irrigation Systems in Southern Idaho - <i>Sayjro K. Nouwakpo, USDA ARS</i>

12:30 PM - 1:00 PM	Lunch Break			
1:00 PM - 2:30 PM	Symposia Sessions			
Conservation Innovation Grants Showcase	Innovative Tools and Technologies for Land and Water Management - <i>Havala Schumacher, USDA NRCS</i>			
3, 2, 1 ... ACTION!	1:00 PM - 1:45 PM Virtual Tour of Water Quality Research in the Iowa River's South Fork Watershed - <i>Kevin J. Cole, USDA ARS</i>			
Adapting Landscapes to Climate Change	Big Solar: Stormwater Impacts and Sheep Grazing Interactions - <i>Rob Davis, Fresh Energy</i>			
Conservation Economics and Policy	Cover Crops: Innovation in Policy Incentives through State Crop Insurance Premium Discounts - <i>Kris Reynolds, American Farmland Trust</i>			
One World, Connected through Conservation	Strengthening the Heart of Conservation in the North Central Region of the United States and Mississippi River Basin - <i>Rebecca Power, University of Wisconsin-Madison Division of Extension</i>			
1:00 PM - 2:30 PM	Oral Presentations			
	1:00 PM	1:23 PM	1:46 PM	2:09 PM
Adaptive Management of Conservation Efforts	Cover Crop Effects on Soil Moisture Dynamics of a Corn Cropping System - <i>Sidath S. Mendis, University of Missouri</i>	Effect of Alfalfa (<i>Medicago sativa</i> L.) on Edge-of-Field Nitrogen (N) and Phosphorus (P) Loss in Ohio - <i>Lourdes D. Arrueta Antequera, The Ohio State University</i>	Overview of Precision Agriculture in Dry-Land Cropping System at Akron, Colorado - <i>Maysoon M. Mikha, USDA ARS</i>	Quantifying the Effects of Climate Change in the Central Mississippi River Basin: Ten Years of Study - <i>Claire Baffaut, USDA ARS</i>
Conservation in Organic, Specialty, Small-Scale, or Urban Agriculture	Conservation Agriculture and Supply Chain Development in the Kentucky Commercial Rye Cover Crop Initiative - <i>Scott Franklin, American Farmland Trust</i>	Conservation Management Effects on Soil Function in a Transitioning Organic Cotton-Peanut Rotation - <i>Paul De Laune, Texas A&M Agrilife</i>	Conservation Tillage and Cover Crop Management Practices in Potato Production to Improve Soil Health and Probability - <i>Mohammad Khakbazan, Agriculture and Agri-Food Canada</i>	Cover Crops and Specialty Crop Agriculture: Exploring Cover Crop Use among Vegetable and Fruit Farmers in Michigan and Ohio - <i>J. G. Arbuckle, Iowa State University</i>
Conservation Models, Tools, and Technologies	Assessment of an Arkansas Discovery Farm in the Eucha-Spavinaw Watershed Concerning Wastewater and Manure Management for Full-Time Dairy Production - <i>James M. Burke, University of Arkansas</i>	Practical Applications of In-Situ Green Canopy Cover - <i>Andres Patrignani, Kansas State University</i>	South Sound Discovery Farms: Researching Manure Management Treatments for Water Quality in King County, Washington - <i>Addie Candib, American Farmland Trust</i>	
Justice, Equity, Diversity, and Inclusion	Exploring the Culture of Agriculture: A Course on Food System Equity - <i>Andrea Basche, University of Nebraska-Lincoln</i>	Promoting Justice, Equity, Diversity, and Inclusion Competency in the Next Generation of Conservation Professionals - <i>Erin Silva, University of Wisconsin-Madison</i>	Recognizing the Contributions of Latinos in Rural Indiana and Wisconsin - <i>Bill J. Berry, Writer and Conservation Communicator</i>	Spheres of Liminality and Discourse as Precursors to Indigenizing Circular Economy Approaches to Sustainable Development Goal 2.5 - <i>Mervyn L. Tano, International Institute for Indigenous Resource Management</i>
Social Sciences Informing Conservation	A Social Cognitive Theory and Self-Determination Theory Approach to Understanding Farmers' Adoption of Nutrient Management Best Management Practices - <i>Lijing Gao, Iowa State University</i>	Individual and County-Level Influences on Iowa Farmers' Use of 4Rs Plus Soil and Water Conservation Practices - <i>Suraj Upadhyaya, Iowa State University</i>	The Social Factors Influencing Cover Crop Adoption in the Midwest: A Controlled Comparison - <i>Linda Prokopy, Purdue University</i>	Why do Farmers Adopt Soil Conservation Practices? A Theoretical Framework and Literature Review - <i>Macson Ogieriakhi, Texas A&M University</i>

2:30 PM - 3:00 PM	Afternoon Break			
3:00 PM - 4:30 PM	Symposia Sessions			
Conservation Innovation Grants Showcase	Bringing down Barriers through Social and Economic Investment - <i>Lucas Isakowitz, USDA NRCS</i>			
3, 2, 1 ... ACTION!	Outreach in the Time of Covid: A Comprehensive Guide to Hosting Virtual Engagement Incorporating Soil Health Demonstrations - <i>Ashley Brucker, American Farmland Trust</i>			
Conservation Models, Tools, and Technologies	Exploring Metrics with the Hypoxia Task Force - <i>Max R. Potthoff, US EPA</i>			
Outreach, Education, and Community Engagement	Peer-to-Peer Learning about Farmer-to-Farmer Learning: Best Practices, Pitfalls, and Promising Ideas - <i>Jenny Seifert, University of Wisconsin-Madison Division of Extension</i>			
One World, Connected through Conservation	Opportunities and Challenges Promoting US Soil Information Technology Globally: Cacao for Peace - Colombia - <i>Charles Kome, USDA NRCS</i>			
3:00 PM - 4:30 PM	Oral Presentations			
	3:00 PM	3:23 PM	3:46 PM	4:09 PM
Adapting Landscapes to Climate Change	23 Years of Agroforestry on SOC on Agricultural Watersheds under a Corn–Soybean Rotation - <i>Miguel Salceda, The University of Missouri-Columbia</i>	Soil Greenhouse Gas Emissions from a Texas Vertisol under Differing Tillage Practices - <i>Dorothy Menefee, USDA ARS</i>	Soil Pore Response to Tile Drainage - <i>Hida R. Manns, Trent University</i>	
Conservation Models, Tools, and Technologies	GIS-Based Indices in Soil and Water Conservation - <i>Anh KV Bui, Ho Chi Minh City University</i>	Impact of Conservation Practices and Soil Physical Properties on Field Hydrology: How Sensitive is the Soil Plant Atmosphere Water (SPAW) Model to Changes in Soil Properties? - <i>Ajoy K. Saha, South Dakota State University</i>	Integrating Fuzzy Logic Riparian Management Decision Support in the Upper Mississippi River Basin - <i>Saumitra Rai, Birla Institute of Technology and Science, Pilani</i>	Using Surge Valves to Increase Irrigation Efficiency and Reduce Nutrient Loss in Furrow Irrigation - <i>Lee Riley, University of Arkansas System Division of Agriculture Cooperative Extension Service</i>
Soil Health Resources, Indicators, Assessment, and Management	Multi-Element Soil Composition at Depth Influence Prairie Pothole Wetlands - <i>Carrie Werkmeister, USDA NRCS</i>	Nitrous Oxide Emissions from Agricultural Soils: Sources and Mitigation Options - <i>Nithya Rajan, Texas A&M University</i>	Soil Conservation Practices Impact Proximal Controls for N ₂ O Production and Consumption in Semiarid Crop - <i>Mark D. McDonald, Texas A&M University</i>	Soil-Test K Spatial Variability and K Loss via Water Runoff in Arkansas - <i>Matt Fryer, University of Arkansas System Division of Agriculture Cooperative Extension Service</i>
4:30 PM - 5:30 PM Evening Social	<u>Room 1</u> Conservation around the World - <i>Annie Binder, Soil and Water Conservation Society</i>		<u>Room 2</u> Two Hughs and a Lie: International Edition - <i>Joe Otto, Soil and Water Conservation Society</i>	

TUESDAY, JULY 27

SYMPOSIA SESSIONS

Conservation Innovation Grants Showcase

11:00 AM – 4:30 PM CT

The USDA Natural Resources Conservation Service (NRCS), in conjunction with SWCS, will host the CIG Showcase at the virtual 2021 SWCS International Annual Conference. Since 2004, CIG has supported the development of innovative natural resource conservation approaches and technologies on working lands.

This year's showcase includes an overview of the CIG program and three themed panels. The first panel focuses on soil health in locations from South Dakota to the Rio Grande Valley. The second panel explores CIG projects involving innovative tools and technologies across a variety of land uses. The final panel includes presentations from CIG grantees whose projects focus on bringing down barriers to implementing conservation activities—from urban gardening to conservation finance.

This showcase runs from 11:00 AM to 4:30 PM CT on Tuesday, July 27. CIG project posters will be showcased in the Poster Presentation tab during the duration of the event

Conservation Innovation Grants Program Overview and Stakeholder Updates and Improving Soil Health around the United States

11:00 AM – 12:30 PM CT

Presentation 1: Conservation Innovation Grants Program Overview and Stakeholder Updates – *Caroline Sherony and Leah Hermens, USDA NRCS*

Presentation 2: Cover Cropping As a Double-Edged Sword: Trade-Offs between Soil Health and Soil Moisture on Water-Limited Farms in South Texas – *Mike Morris, National Center for Appropriate Technology; Alexis Racelis, University of Texas Rio Grande Valley*

Presentation 3: Vegetation and High Rainfall Contribute to Improved Soil Health in a North American Northern Great Plains Saline-Sodic Soil – *Shaina Westhoff, South Dakota State University*

Presentation 4: Measuring Soil Health in the Upper Midwest to Improve Water Quality – *Ann Marcelle Lewandowski and Hava K. Blair, University of Minnesota*

Innovative Tools and Technologies for Land and Water Management

1:00 PM – 2:30 PM CT

Presentation 1: Promoting Sensor Based Technology to Improve Land and Water Resources Conservation – *Saleh Taghvaein, Oklahoma State University*

Presentation 2: A New Transport x BMP-Based Phosphorus Index Approach for Identifying Fields with a High Risk of P Loss and Selection of BMPs for Manure Management across the Northeastern United States – *Quirine Ketterings, Cornell University*

Presentation 3: Using Farmer-Based Water Technology Farms to Implement New Irrigation Technologies to Sustain the Rural Economy – *Jonathan Aguilar, Kansas State University*

Presentation 4: RangeDocs: Enhancing Access to Key Rangelands Resources through a Rangeland Thesaurus and Improved Search Technology – *Jason W. Karl, University of Idaho*

Bringing down Barriers through Social and Economic Investment

3:00 PM – 4:30 PM CT

Presentation 1: Sustainable Conservation Investment Fund: An Impact Investment Approach for Chesapeake Farms and Forests – *Craig Highfield, Alliance for the Chesapeake Bay*

Presentation 2: Growing for Chicago – *Bradley Roback, City of Chicago*

Presentation 3: Enabling Healthy Food Production, Soil Restoration, and Water Quality Improvement through the Establishment of Secure and Sustainable Farmland Access Tenures – *John Steven Bianucci, Iroquois Valley Farms*

Presentation 4: Providing Economic Evidence for Soil Health Investment: Case Studies, Predictive Assessments, and Three Economic Tools – *Michelle Perez, American Farmland Trust*

90 Cover Crops in 90 Minutes

11:00 AM – 12:30 PM CT

Moderator: Keith Berns, Green Cover

Presenter: Dale Strickler, Green Cover

Join us for a LIVE tour of Green Cover's cover crop plots and listen as industry experts, Keith Berns and Dale Strickler take you on a guided tour of more than 90 different cover crop species, mix combinations, and biological demonstrations. Some of the more "exotic" plants to be covered will be: chia, sesbania, lab lab, sesame, okra, squash, gourds, spineless safflower, and more! An extensive sorghum and millet evaluation plot section will also be featured. Mix combinations and biological additive trials will be looked at and discussed. A live link will allow you to ask specific questions about the species as we move through the plots. This is a rare opportunity to see this level of cover crop diversity and listen to expert analysis without having to travel!

A Walk Through the "Guide to Outcomes Estimation Tools," a Dive into a Do-It-Yourself Method to Estimate Water Quality Outcomes, and Helpful Tips from the Leading Tool Developers

11:00 AM – 12:30 PM CT

Moderator: Michelle Perez, American Farmland Trust

Presenters: Emily Cole, American Farmland Trust; Emily Bruner, American Farmland Trust; Ali Saleh, Tarleton State University; Eric Coronel, Field to Market

Managers of the USDA NRCS Regional Conservation Partnerships Program (RCPP) and other landscape-scale projects want to estimate the water quality, climate, social, and economic outcomes associated with the adoption of conservation practices by farmers in their projects. However, many managers struggle to determine which modeling tool or method is right for their project, and using an outcomes estimation tool can be very hard, especially for those without prior modeling experience.

To help, AFT identified, described, and compared readily available outcomes estimation tools and methods to educate conservationists and empower project managers to select one or more tools/methods to meet their project outcomes

quantification goals. We reviewed 51 models, tools, and methods to see which would likely work for a project manager without requiring professional computer modeling experience. The Guide features seven water quality tools and one method, three climate tools, one social tool and one method, and three economic tools that provide quantitative estimates of outcomes, are available to the public and for use in more than one state.

Perez and Cole, Guide coauthors will first briefly walk attendees through tips on how to use the Guide. Next, they will compare and contrast tools featured in the Guide, including a comparison of those that are best suited for field- and site-specific outcomes estimation versus those developed to estimate project-level generalized outcomes. Then, Bruner will provide a deep dive into a do-it-yourself method to estimate water quality outcomes. Finally, Saleh and Coronel will provide a quick overview of the Nutrient Tracking Tool (NTT) and the FieldPrint Calculator, respectively, and some "pro user tips" on how to maximize usability, emphasizing the strengths and drawbacks of selecting their tools for outcomes estimation.

Diversity: Connected through Conservation

11:00 AM – 12:30 PM CT

Moderator: Katrina Thompson, USDA NRCS

Presenters: Rosemary Abban, USDA NRCS; Angela Biggs, USDA NRCS; Sharon Nance, USDA NRCS; Bertha Venegas, USDA NRCS

The panelists will lead a thought-provoking discussion on cultural diversity. We plan to show how the impact of inclusiveness can add value to the workplace environment and bridge the challenges of intersectionality when navigating the work life of conservationists connected through conservation.

Edge of Field in Action: A Discussion on Edge of Field Practices from Roadmap to Implementation

11:00 AM – 12:30 PM CT

Moderator: Kris Johnson, The Nature Conservancy

Presenters: Adrienne Marino, The Nature Conservancy of Illinois; Karen Wilke, The Nature Conservancy of Iowa; John Swanson, Polk County Public Works; Mary Beth Stevenson, City of Cedar Rapids; Caroline Wade, Ecosystem Services Market Consortium

Last year, The Nature Conservancy (TNC) led a collaborative process with SWCS and Meridian Institute to create an Edge of Field (EoF) Roadmap. Together, along with industry experts, we assessed a variety of EoF practices and synthesized key information to identify barriers to and opportunities for the wide-scale adoption of practices. Our goal was to develop a strategic roadmap with actionable recommendations to catalyze the adoption of practices through science, business, and policy levers.

EoF practices on agriculture lands play an important role in the health of our waterways. They are one part of a whole systems approach to sustainable agriculture that also includes in-field conservation practices and downstream floodplain protection and restoration. In addition to water quality benefits, EoF practices provide carbon storage, pollinator and wildlife habitat, flood storage, and streambank stabilization.

The Roadmap is grounded in a scientific literature review and an analysis of existing policies and programs to offer pragmatic, cost-effective recommendations. This roadmap complements TNC's 2016 reThink Soil Roadmap, a parallel strategy to facilitate the adoption of in-field practices. Together, these Roadmaps aim to advance positive change on working lands to deliver economic and environmental benefits to farmers and communities.

In this session, we will provide an overview of the Edge of Field Roadmap and present details from the scientific literature review that provided the foundation of the Roadmap. Then we will share information and stimulate discussion about on the ground projects and opportunities to scale up implementation efforts. In particular, we'll discuss the importance of public private partnerships and effective collaboration and will explore the potential for emerging ecosystem services markets and urban water quality incentive programs to support practice implementation.

Tools to Plan and Evaluate Soil Health Management Systems for Carbon Sequestration

11:00 AM – 12:30 PM CT

Moderator: Bianca Moebius-Clune, USDA NRCS

Presenters: Rachel Seman-Varner, USDA NRCS; Skye Wills, USDA NRCS; Kristen Veum, USDA ARS; Adam Chambers, USDA NRCS; Dan Dostie, USDA NRCS; Mary Podoll, USDA NRCS

Soil Health Management Systems (SHMS), as defined by the NRCS, have evolved from foundational concepts of soil conservation, soil productivity, and soil quality. SHMS focus on soil function and the processes connected to multiple provisioning, supporting, and regulating ecosystem services. Critical ecosystem services provided by SHMS are climate mitigation, adaptation, and resilience. Some conservation practices included in SHMS sequester carbon and reduce greenhouse gas emissions, while also allowing production systems to adapt and to be more resilient to climate extremes and changing weather patterns. Across NRCS and with other agencies and partners, the Soil Health Division supports the implementation of SHMS on the nation's working lands and the evolution of the science related to soil health assessment, evaluation, and development. Speakers in this symposium will address current collaborations and tools that are used in design and evaluate practices and systems that impact carbon sequestration. Topics will cover the Conservation Practice Database, Soil Health Demonstration Trials, Conservation Practice Standard (808) Soil Carbon Amendments, Dynamic Soil Properties Data Hub, Soil Health Assessment Protocol and Evaluation (SHAPE), COMET-Farm model focusing on the COMET-Planner application, and how these and other tools are applied. A panel discussion among presenters will facilitate development of ideas to integrate these and other tools, promote collaboration, and cross-promote related projects, and to promote use at the state and regional levels.

Virtual Tour of Water Quality Research in the Iowa River's South Fork Watershed

1:00 PM – 1:45 PM CT

Moderator: Kevin Cole, USDA ARS

Presenter: Allisyn Stanfield, USDA ARS

The South Fork of the Iowa River watershed is a USDA Conservation Effects Assessment Project (CEAP) watershed located in north-central Iowa. The landscape is gently rolling and poorly drained, comprised of 'recent' glacial deposits (approx. 12,000 years). Agricultural drainage systems installed in the early 1900s have allowed the original wetland and prairie soils to become among the world's most productive agricultural lands; today about 90% of this 200,000 acre watershed is in crop production. Water quality

issues, particularly high loads of nitrate nitrogen, were identified in the mid-1990s through stream monitoring conducted by the US Geological Survey under the National Water Quality Assessment (NAWQA). The USDA Agricultural Research Service's National Laboratory for Agriculture and the Environment (NLAE) extended stream and tile monitoring efforts in the early 2000s, leading to the South Fork of the Iowa River Watershed being designated as a CEAP watershed around 2004. The virtual tour will explore the water quality monitoring stations that have been designed to quantify nutrient and sediment transport. The virtual tour will include drone-captured video following the flow of water from farm field to the stream monitoring station. Monitoring stations collected data by using sensors and water samplers. Sensors have included turbidity, conductivity, dissolved oxygen, nitrate, phosphate, and stage. Samples were collected automatically during runoff events and weekly visits. Those samples were analyzed by NLAE for nitrate nitrogen, total phosphorus, ortho phosphorus and suspended sediment. Stations were established to better understand the variability of transport with drainage area from edge of field, field tile, and tile drainage district to large basins. Videos will be presented of field activities at a stream monitoring station. Summary nutrient data from the last 20 years will be presented.

Big Solar: Stormwater Impacts and Sheep Grazing Interactions

1:00 PM – 2:30 PM CT

Moderator: Brian Ross, Great Plains Institute

Presenters: David Mulla, University of Minnesota; Jake Janski, Minnesota Native Landscapes; Jennifer Daw, National Renewable Energy Lab

Wind and solar energy are now the least expensive form of electric energy generation in world, including in the United States. Consequently, the market for renewable energy projects is surging, with large-scale projects being proposed in every state in the nation. Large-scale PV solar projects, in particular, present unique and uncertain risks and opportunities to water quality and watershed functions. The US Department of Energy has funded the Photovoltaic Stormwater Management Research and Testing (PV-SMaRT) project to evaluate water quality impacts of large-scale solar development, and the Minnesota Department of

Agriculture has funded research to determine the effects of prescribed sheep grazing on plant diversity and density within a solar array. The PV-SMaRT study will create solar-specific runoff co-efficients that consider type of ground cover, soil type, hydrology, slope, and solar array design based on field testing across the nation and 3-D modeling. The grazing study will help inform best management practices.

PV-SMaRT field research focuses exclusively on the impact of ground cover choices and use of disconnection to mitigate for the volume and velocity at the drip edge of the panel. Ground cover choices have mitigating effects, but these could vary substantially under different site conditions, site designs, and design storm events. One potential implication of the studies is understanding the conditions under which conversion of agricultural or disturbed land to solar development with appropriate ground cover could meet green infrastructure goals of improving water quality outcomes within impaired watersheds.

Cover Crops: Innovation in Policy Incentives through State Crop Insurance Premium Discounts

1:00 PM – 2:30 PM CT

Moderator: Kris Reynolds, American Farmland Trust

Presenters: Lara Bryant, Natural Resources Defense Council; Sarah Carlson, Practical Farmers of Iowa; Tim Fink, American Farmland Trust; Max Webster, American Farmland Trust; Ben Gramig, University of Illinois

In 2018, The Iowa Department of Agriculture and Land Stewardship (IDALS) launched a first-in-the-nation program that rewarded farmers who plant cover crops a \$5 per acre discount on their crop insurance. In 2020, the Illinois Department of Agriculture followed suit. This symposium will discuss the state crop insurance incentive programs from their genesis to implementation and look forward to the future expansion of similar incentives across the nation. First, we will hear the behind-the-scenes genesis story of the Iowa and Illinois crop insurance programs from the policy advocates who worked with state agriculture departments and USDA to launch and promote the programs. On-the-ground-experts in Iowa and Illinois will discuss the program details and how implementation has evolved since

2018, including the programs' challenges and lessons for success. Then, we will hear about program evaluation and lessons learned from the results of program evaluation surveys conducted by Iowa State University and the University of Illinois. Panelists will share the details of how the surveys were created and distributed to farmers in each state and present a detailed analysis of survey findings. We will discuss the effectiveness of the programs as an incentive for increased cover crop adoption and the conservation impacts of the programs. Finally, we will discuss how to meet future demand for participation in the programs. Demand in Illinois, in particular, greatly exceeded available funds. What steps can policy advocates take to make these types of incentives available for more farmers, and what would that mean for increased cover crop adoption and the associated environmental benefits?

Strengthening the Heart of Conservation in the North Central Region of the United States and Mississippi River Basin

1:00 PM – 2:30 PM CT

Moderator: Rebecca Power, University of Wisconsin-Madison Division of Extension

Presenters: Jenny Seifert, University of Wisconsin-Madison Division of Extension; Mark Burbach, University of Nebraska-Lincoln; Jane Frankenberger, Purdue University; Todd Sutphin, Iowa Soybean Association

People—our choices, our relationships with each other and the planet, and our institutions—are the heart of conservation. New tools, technologies, policies, and approaches are exploding onto the conservation scene. More than ever, conservation professionals, farmers, and other conservation leaders need timely and effective access to information, training, peer-learning and networking opportunities, and heart-felt support for what is often a long-term commitment to caring for land, water, and community in the places we live and work. This symposium will make the case for expanded investment in people as part of an overall theory of change for getting to scale in watershed management; present the results of a survey of watershed professionals in the Upper Mississippi River Basin; present three watershed training and peer learning programs; and provide time for participant discussion of critical needs for supporting watershed leaders. Programs featured will

include the Sand County Foundation—led Leadership for Midwestern Watersheds, the Nebraska Water Leaders Academy, the Indiana Watershed Leadership Academy, and some new efforts to expand farmer leadership in watershed management beyond the farm gate in the Mississippi River Basin. Presenters will cover theoretical foundations, program delivery and results, as well as future directions.

Outreach in the Time of Covid: A Comprehensive Guide to Hosting Virtual Engagement Incorporating Soil Health Demonstrations

3:00 PM – 4:30 PM CT

Moderator: Ashley Brucker, American Farmland Trust

Presenter: Stephanie McLain, USDA NRCS

Organizations such as American Farmland Trust and the Natural Resources Conservation Service have been leaders in engaging farmers and landowners in conservation implementation. With the onset of COVID-19, outreach and education was heavily impacted. Many halted their efforts altogether while others sought alternative methods to continue impacting change in agricultural communities. An obvious shift was to virtual platforms for meetings and educational webinars. Through trial and error, participant feedback, and varied experience we have begun to master the art of not only leading engaging virtual events but also incorporating impactful demonstrations. We will be sharing a comprehensive guide on how to facilitate effective outreach using virtual platforms. Through the session we will also be exemplifying proper techniques and step-by-step guidance on performing soil health demonstrations online, such as slake demos, slump tests, rain fall simulators, and cover crop talks. In our final segment of the symposium, we will acknowledge challenges and lessons learned in working through virtual platforms. We will also troubleshoot issues from our attendees and offer up creative solutions for outreach in the time of Covid.

JOIN THE CONVERSATION!



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Exploring Metrics with the Hypoxia Task Force

3:00 PM – 4:30 PM CT

Moderator: Max Potthoff, US Environmental Protection Agency

Presenters: Katie Flahive, US Environmental Protection Agency; Adam Schnieders, Iowa Department of Natural Resources

The Mississippi River/Gulf of Mexico Hypoxia Task Force (HTF) is a partnership of 5 federal agencies, 12 states, and a tribal representative, who work together collaboratively and voluntarily toward the goals of the Task Force. The HTF formed and adopted their long-term, large-scale challenge of reducing nutrient loss in the Mississippi/Atchafalaya River Basin (MARB) in order to reduce the size of the hypoxic zone in the northern Gulf of Mexico. The goal of the Hypoxia Task Force is to reduce the five-year average areal extent of the hypoxic zone in the Gulf of Mexico to less than 5,000 square kilometers by 2035, with an interim target for reducing total nitrogen and total phosphorus loads by 20% by the year 2025. This water quality goal is important, and the HTF also recognizes the need to see change more rapidly and locally, too.

Peer-to-Peer Learning about Farmer-to-Farmer Learning: Best Practices, Pitfalls, and Promising Ideas

3:00 PM – 4:30 PM CT

Moderators: Jenny Seifert, University of Wisconsin-Madison Division of Extension/North Central Region Water Network; Anne Nardi, University of Wisconsin-Madison Division of Extension/North Central Region Water Network

Presenters: Jessica Espenshade, National Wildlife Federation; Whitney Prestby, University of Wisconsin-Madison Extension Natural Resources Institute; Richard Sloan, Farmer, Lime Creek Watershed Council; Landon Yoder, Indiana University

There is a groundswell of interest in facilitating farmer-to-farmer learning about conservation practices. Research and practice show the power of peers in influencing farmers' decisions. Farmers value what their peers think and do, especially those who have been there and done that. Outreach professionals across sectors are thus running

programs to help farmers learn from each other. There is much outreach professionals and farmer leaders can learn from one another about running these programs effectively.

This symposium will be a chance for conservation professionals to do their own peer-to-peer learning about best practices, pitfalls, and promising ideas in farmer-to-farmer engagement. We'll address questions such as how can we (1) apply the science behind peer learning, (2) better engage the elusive "middle adopters," (3) address leadership fatigue among already dedicated farmers, and (4) overcome peer-to-peer barriers, such as competition and fear of being a black sheep.

A panel discussion, with four professionals who are steeped in farmer-to-farmer learning, will set the stage with their methods and results. Extension educator Whitney Prestby uses social media and video to help farmers in Wisconsin's Lower Fox Demonstration Farm Network share their insights. Jessica Espenshade leads National Wildlife Federation's Cover Crops Champions program, which empowers farmers to be ambassadors to their peers, and their Grow More training to improve engagement with middle adopters. Social scientist Landon Yoder studies how peer networks influence farmers' decisions. Richard Sloan, Iowa farmer and conservation leader, works with Practical Farmers of Iowa, Iowa Learning Farms, and other organizations to help farmers adopt conservation practices.

Through Q&A and prompted chats, we will also exchange ideas and questions from our own experiences. You will leave with new ideas from fellow professionals to apply to your efforts to empower farmers to be part of the solution.

Opportunities and Challenges Promoting US Soil Information Technology Globally: Cacao for Peace – Colombia

3:00 PM – 4:30 PM CT

Moderator/Presenter: Charles Kome, USDA NRCS

The USDA NRCS collaborated with the Pennsylvania State University (PSU) and the International Center for Tropical Agriculture (CIAT) (with Colombian Ministry of Agriculture and partners) in conducting a pilot soils investigation in the Sierra Nevada de Santa Marta region in North Eastern Colombia. The objectives of

the project were to build capacity for the Colombia Ministry of Agriculture and partners to conduct soil and cocoa inventories at scales suitable for land management. In addition, there was a desire by the Colombian government to develop interpretive products such as cocoa planning area suitability maps to promote cocoa productivity through intensification. Soil and cocoa leaf samples were collected from a total of 249 farms in three cacao farming communities (the Arhuaco Reservation – Katansama [148], Guardabosques de la Sierra Producer Association [66], and Dibulla Organic Producers Association [35]). Samples were analyzed and processed, and NRCS, in collaboration with partners, developed a general soil map, several soil property maps, and a comprehensive cacao suitability map (1:25,000 scale). Other soil information products (accessible via computers or cell phones) include comprehensive soil biological, chemical, and physical properties for the sampled area; Arc-GIS Web Tool for Soils and Cocoa genomics accessible to all (in English: Web Map-Cacao for Peace: <https://arcgis.com/arcgis/1HmGrL> ; and Spanish:

Mapa Web-Cacao para la Paz: <https://arcgis.com/arcgis/1HmGrL>); Colombia-specific soil erosion demonstration tool; and multicriteria cocoa suitability maps included in the “Soil and Cacao Genomics Survey of Sierra Nevada de Santa Marta Region, Colombia” report. This project was funded by the US Agency for International Development and facilitated by the Foreign Agricultural Service.

Growing a Sustainable Future

Farmers are among our greatest conservation allies. They help feed, fuel and clothe a growing world, while caring for the lands and waters on which we all depend. By taking care of their greatest capital asset—the soil—farmers are key to helping tackle our greatest conservation challenges.

It's time to unearth the power of soil health.

The Nature Conservancy 
nature.org/workinglands

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WEDNESDAY, JULY 28

SCHEDULE AND EVENTS

SCHEDULE

Times listed below are Central Time.

8:00 AM – 9:00 AM	Morning Social
9:00 AM – 10:45 AM	Opening Remarks, Address from USDA NRCS, and Plenary Session
10:45 AM – 11:00 AM	Morning Break
11:00 AM – 12:30 PM	Concurrent Sessions (See pages 38-40)
12:30 PM – 1:00 PM	Lunch and Learn Open Networking
1:00 PM – 2:30 PM	Concurrent Sessions (See pages 38-40)
2:30 PM – 3:00 PM	Afternoon Break
3:00 PM – 4:30 PM	Concurrent Sessions (See pages 38-40)
4:30 PM – 5:00 PM	Conference Wrap-Up

will share images and experiences from their conservation work with smallholder farmers through five-minute Ignite presentations. Explore conservation through the lens of multiple different landscapes and discover what we can learn from our neighbors. Highlighted during this session will be conservation practices within smallholder farming systems in Malawi, Ecuador, Uganda, and the Hopi Nation.

We invite you to add your experiences to the SWCS global conservation discussion! To hear from fellow conservationists around the world and add your perspective, follow the links below:

Conservation Success

What is one soil or water conservation success that you've had?

- <https://flipgrid.com/03cc8bd6>
- Flipgrid App: **03cc8bd6**
- Use the guest passcode: **swcs2021**

Global Awareness

What do you want people beyond your region to know about your landscape or natural resources?

- <https://flipgrid.com/34109138>
- Flipgrid App: **34109138**
- Use the guest passcode: **swcs2021**

Room 2: Morning Yoga: Travel the World from Your Office Chair

Moderator: Jordyn Rodriguez, Soil and Water Conservation Society

Presenter: Lily Allen-Duenas, Wild Yoga Tribe

Back by popular demand, Lily Allen-Duenas has taught yoga around the world and will be teaching a LIVE yoga class, streamed from France! During this 60-minute yoga class, Lily will demonstrate simple poses and stretches to relieve the strain on one's body and mind from sitting at a desk and other monotonous office activities and share global

EVENTS

Morning Social

8:00 AM – 9:00 AM CT

Participate in one of the social rooms for interaction amongst learning and dialogue.

Room 1: Conservation around the World

Moderator: Annie Binder, Soil and Water Conservation Society

Presenters: Amos Ngwira, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT); Jeffrey Alwang, Virginia Tech; Victor Barrera, Instituto Nacional de Investigaciones Agropecuarias (INIAP); Jorge Delgado, USDA ARS; Yazidhi Bamutaze, Makerere University; Michael Kotutwa Johnson, Hopi Traditional Farmer

Tour the globe and see conservation from around the world. During this social, researchers and practitioners

experiences through yoga. The first half of the class will focus on yoga poses that are office-friendly and can be done at your desk. The second half will be a blend of seated and standing postures and will demonstrate the influences on the practice around the world. Please wear comfortable clothes. Also, the body is happiest during yoga when done on an empty stomach, so it is advised to not consume food or drink coffee before this class. Always consult your doctor before starting a new physical activity regimen. This class is perfect for beginners or first-time yoga practitioners. Please have either a yoga mat, towel, or blanket available, as well as a stable chair that does not have wheels attached to it. Check out Lily's prerecorded yoga classes on [YouTube here](#) or visit her website at www.wildyogatribe.com.

OPENING REMARKS, ADDRESS FROM USDA NRCS, AND PLENARY SESSION

9:00 AM – 10:45 AM CT

The Wednesday general session will be opened by SWCS Chair Dale Threatt-Taylor. Following will be an address from USDA NRCS Chief Terry Cosby. The general session will conclude with the Where Data Meets Practice: A Panel on Outcome Driven Conservation.

Address from USDA NRCS

Presenter: USDA NRCS Chief Terry Cosby



NRCS Chief Terry Cosby began his career with the agency in 1979 as a student trainee in Iowa. Terry's roots on the land run deep. Raised on a cotton farm with his eight siblings in Tallahatchie County, Mississippi, his love for the land began at an early age. The farm, now in his

family for three generations, was purchased by his great-grandfather in the late 1800s.

Over Terry's 42 years with the agency, he has served in numerous capacities. Prior to serving as NRCS Chief, he was the Ohio State Conservationist for 16 years. He has also served in leadership positions at NRCS National Headquarters in Washington, DC; in Iowa as an Area Resource Conservationist; in Missouri as an Assistant State Conservationist for Field Operations; and Idaho as a Deputy State Conservationist.

One of Terry's proudest achievements is the instrumental role he played in establishing the Ohio Interagency Forestry Team and in the formation of its governance model and business plan. Under his leadership, Ohio was the first state to use Environmental Quality Incentive Program funds for forestry practices. Today, he leads the NRCS Hiring Strategy initiative which will shape, guide, and solidify NRCS as the premiere technical service agency for USDA conservation.

Terry and his wife Brenda are the proud parents of four wonderful children (one of whom was lovingly "adopted"). Today he continues to hunt and fish as much as possible and greatly enjoys spending time with his seven young grandchildren.

Where Data Meets Practice: A Panel on Outcome Driven Conservation

Moderators: Michelle Perez, American Farmland Trust

Presenters: Chief Terry Cosby, USDA NRCS; Lisa Duriancik, USDA NRCS; Lexi Clark, Field to Market; Jason Weller, Truterra LLC

With ambitious environmental goals being set around the world, measuring outcomes to better understand and pay for success is at the forefront of the conservation conversation. During this panel, you will hear from SWCS members who are advancing tools and methods to measure, target, quantify and scale up conservation in the public, nonprofit, and private sectors.



Michelle Perez, American Farmland Trust (AFT), Water Initiative Director, SWCS National Capital Chapter Council Member

Michelle Perez leads AFT's efforts to achieve better water quality and reduce agricultural nonpoint source pollution through a comprehensive initiative with links to

outcomes quantification, soil health, climate, and ecosystem markets. Perez previously served AFT as a senior policy specialist, where she researched, developed, and promoted innovative agricultural and conservation policies. Before joining AFT, Perez worked at World Resources Institute, leading projects

on nutrient trading, developing nutrient assessment tools, and quantifying environmental outcomes. She previously worked for Environmental Working Group and Alliance to Save Energy. During her career, Perez has published numerous reports and papers. She currently serves as vice president of the Soil Water Conservation Society's National Capital Chapter. She is an alumna of Occidental College where she studied biology. She holds a doctorate in environmental policy from the University of Maryland School of Public Policy where her dissertation was a three-state comparative case study of farm nutrient management regulations in Delaware, Maryland, and Virginia.



Lisa Duriancik, USDA NRCS Watersheds Assessment Leader, Conservation Effects Assessment Project (CEAP)

Lisa Duriancik is the leader for the Watershed Assessment Studies component of CEAP on the NRCS Outcomes Team. She provides national leadership for a network of

watershed-scale projects assessing outcomes, working with numerous partners at the intersection of water and soil resources, conservation and agriculture. Duriancik works to document soil and water conservation effects and facilitates development and validation of innovative assessment techniques. Her passion is synthesizing and applying lessons learned to conservation programs, practices, planning tools, and policy to improve conservation effectiveness. She has over 28 years of experience—20 of that with USDA NRCS CEAP and Great Lakes Restoration Initiative and USDA CSREES National Integrated Water Quality Program. She conducted on-farm research prior to that with The Ohio State University and The Rodale Institute. In 2020, she coauthored six papers in the *Journal of Soil and Water Conservation* related to this topic. She holds a BS in environmental science/geology from Allegheny College and a MS in environmental science/soil ecology from The Ohio State University.

CEAP is a multiagency effort to quantify the environmental effects of conservation practices and programs and develop the science base for managing the agricultural landscape for environmental quality. Project findings are used to guide USDA conservation

policy and program development and help conservationists, farmers, and ranchers make more informed conservation decisions.



Lexi Clark, Field to Market Program Director

Lexi Clark supports the scaling and implementation of Field to Market's Continuous Improvement Accelerator by working with growers and the supply chain to document and demonstrate continuous improvement in environmental

outcomes. With more than a decade of experience serving as a soil conservationist for USDA NRCS, Clark brings with her a passion for stewardship and depth of expertise in conservation practices focused on nutrient management and building soil health. Prior to joining Field to Market, she served as a project analyst and a subject matter expert in environmental science for ProSoDel. She holds a BA from Mary Baldwin University and a MS in environmental science and engineering from Virginia Tech.

Field to Market is a diverse collaboration working to create productive and profitable opportunities across the agricultural value chain for continuous improvements in environmental outcomes. Field to Market's work is grounded in science-based tools and resources, unparalleled, system-wide collaboration, and increased supply-chain transparency.



Jason Weller, Truterra LLC President

Jason Weller joined Land O'Lakes, Inc., in 2017 where he serves as the President of Truterra, leading the team that is generating conservation solutions for the farmer cooperative's members and ag retailer owners. He previously

served as Chief of USDA NRCS. Prior to serving as Chief, Weller served on the US House Appropriations Subcommittee on Agriculture, the US House Budget Committee, and in the White House Office of Management and Budget. He and his family live in Minnesota, and he's proud that his young daughters are 6th generation Minnesotans.

Truterra, LLC, offers the only farmer-owned, retailer-driven food and agriculture sustainability program in the United States. Since the program launch in 2019, over 1,900 farmers put their trust in the Truterra network to help them advance and accelerate stewardship on 29,000 fields.

Lunch and Learn Open Networking

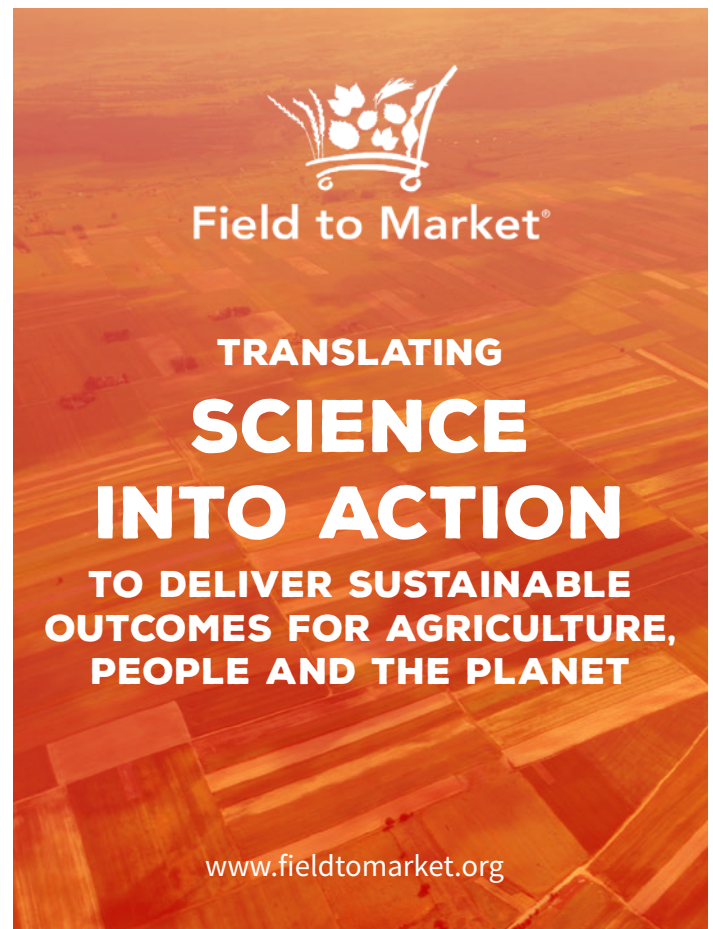
12:30 PM – 1:00 PM CT

Join your fellow conference attendees in one of our many open networking rooms. These rooms offer time for networking and interaction among one another. Join in with your cameras turned on! These rooms can be found under the Open Networking tab within the platform.

Conference Wrap-Up

4:30 PM – 5:00 PM CT

Join SWCS CEO Clare Lindahl and SWCS Chair Dale Threath-Taylor for the 76th SWCS International Annual Conference wrap-up!



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Wednesday, July 28, 2021
All Times Listed in Central Time

8:00 AM - 9:00 AM Morning Social	Room 1 Conservation around the World - <i>Annie Binder, Soil and Water Conservation Society</i>		Room 2 Morning Yoga: Travel the World from Your Office Chair - <i>Lily Allen-Duenas, Wild Yoga Tribe</i>	
9:00 AM - 10:45 AM	Opening Remarks - <i>Dale Threatt-Taylor, Soil and Water Conservation Society Chair</i> ; Address from USDA NRCS - <i>Chief Terry Cosby</i> ; Where Data Meets Practice: A Panel on Outcome Driven Conservation - <i>Michelle Perez, American Farmland Trust</i> ; <i>Lisa Duriancik, USDA NRCS</i> ; <i>Lexi Clark, Field to Market</i> ; <i>Jason Weller, Truterra, LLC</i>			
10:45 AM - 11:00 AM	Morning Break			
11:00 AM - 12:30 PM	Symposia Sessions			
3, 2, 1 ... ACTION!	11:00 AM - 11:25 AM Improving Water Quality in the Upper Snake-Rock Conservation Effects Assessment Project - <i>David Bjorneberg, USDA ARS</i>		11:25 AM - 12:30 PM Virtual Field Day: Increasing Wetlands and Oxbows = Improved Water Quality and More Wildlife - <i>Jacqueline Comito, Iowa State University</i>	
Adapting Landscapes to Climate Change	USDA Climate Hub Adaptation and Mitigation Showcase - <i>Emile Elias, USDA ARS</i>			
Conservation Economics and Policy	Ecosystem Services Market Consortium (ESMC) Enrollment Specialist Training for ESMC’s Market Program - <i>Caroline Wade, Ecosystem Services Market Consortium</i>			
Justice, Equity, Diversity, and Inclusion	Missing in Action: A Failure to Deploy Women Landowners - <i>Jean C. Eells, E Resources Group, LLC</i>			
One World, Connected through Conservation	Integrating Climate Benefits into Conservation Planning: Engaging Local, Regional and National Communities of Practice - <i>Emily Bruner, American Farmland Trust</i>			
11:00 AM - 12:30 PM	Oral Presentations			
	11:00 AM	11:23AM	11:46 AM	12:09 PM
Conservation Models, Tools, and Technologies	Addressing Information Gaps to Better Guide Land and Water Conservation Practices in the Mississippi River Basin Using the Great Lakes to Gulf Virtual Observatory Platform (GLTG) - <i>Edward Kratschmer, Lewis and Clark Community College</i>	Assessing How Combined Best Management Practices Mitigate Algal Blooms Using Algal Nutrient Limitation Thresholds - <i>Richard E. Lizotte, USDA ARS</i>	Multistate Financial Data for Use with the Agricultural Conservation Planning Framework (ACPF) - <i>Emma Bravard, Iowa State University</i>	
Outreach, Education, and Community Engagement		Farmer Advocates for Conservation: Farmer to Farmer Outreach - <i>Stephanie M. Singer, The Nature Conservancy</i>	Farmer Champions for Conservation Outreach - <i>Adam P. Reimer, National Wildlife Federation</i>	Power of Soil: An Agenda for Change to Benefit Canada’s Farmers and Climate Resilience - <i>Paul G. R. Smith, Equiterre and Greenbelt Foundation</i>
Soil Health Resources, Indicators, Assessment, and Management	Dynamic Soil Properties of the Keith Soil Series in Northwest Kansas - <i>Peter Tomlinson, Kansas State University</i>	Microbial Taxa Associated with Reduced Tillage are Linked to Standardized Laboratory Respiration - <i>Elizabeth L. Rieke, Soil Health Institute</i>	Soil Health and Cotton Yield in Sandy Soil of the Semiarid High Plains of Texas - <i>Katie Lewis, Texas A&M Agrilife</i>	Soil Health Parameters Vary Based on Soil Type in Semiarid Texas Cropping Systems - <i>Joseph Burke, Texas A&M AgriLife Research</i>
Water Resource Assessment and Management	Consistent Fertilizer Application Increased Corn Yields without Change in Nitrate Export - <i>Chelsea C. Clifford, Iowa State University</i>	Economic Analysis of Controlled Drainage in Corn-Producing Farms in Quebec and Ontario - <i>Mfon Essien, McGill University</i>	Quantification of Surface Hydrologic Processes Influencing Nutrient Transport on Upland Areas - <i>John E. Gilley, USDA ARS</i>	The Tradeoffs of Nitrogen-Loss Reduction Strategies in Agricultural Conservation Systems - <i>Lindsay Pease, University of Minnesota Twin Cities</i>

12:30 PM - 1:00 PM	Lunch and Learn Open Networking Hour			
1:00 PM - 2:30 PM	Symposia Sessions			
3, 2, 1 ... ACTION!	1:00 PM - 1:45 PM From The Field to the Lab: Inside the Iowa Soybean Association’s Water Monitoring Program - <i>Anthony Seeman, Iowa Soybean Association</i>		1:45 PM - 2:30 PM International Perspectives on Deforestation: The Solar Cooking Solution - <i>Peg Barratt, Solar Cookers International</i>	
Adaptive Management of Conservation Efforts	Avoiding Conservation Tradeoffs in Controlling Phosphorus Loss from Agriculture - <i>Andrew Sharpley, University of Arkansas</i>			
Conservation Models, Tools, and Technologies	Integrating the NTT Water Quality Tool into the COMET-Farm Greenhouse Gas Assessment Tool for Co-Benefits Analysis - <i>Ali Saleh, Tarleton State University</i>			
One World, Connected through Conservation	Reaching a Broader Conservation Audience in the Time of COVID-19 - <i>Bengt Hyberg, H&H Conservation</i>			
Water Resource Assessment and Management	Enhancing Natural Hazard Resilience through Nonpoint Source Management - <i>Ellie Flaherty, US EPA</i>			
1:00 PM - 2:30 PM	Oral Presentations			
	1:00 PM	1:23 PM	1:46 PM	2:09 PM
Adapting Landscapes to Climate Change	Adapting a Wetland to Benefit Local Conservation Needs - <i>Eugene A. Matzat, Purdue University</i>	Bridging Scientific and Experiential Knowledges Via Participatory Climate Adaptation Research: A Case Study of Dry Farmers in Oregon - <i>Amy Garrett, Oregon State University</i>	Farmer Climate Adaptation: Farming Harder, Farming Different and Stopping Altogether - <i>Callia Tellez, Ohio State University</i>	Forging the Missing Link: Conservation Services and Agricultural Cooperatives - <i>Joseph Otto, Soil and Water Conservation Society</i>
Conservation Economics and Policy	Ag Retail in Transition: Evaluating a Fee-Based Sustainability Service Model - <i>Seth Harden, The Nature Conservancy</i>	Farmer Survey to Determine Perceived Benefits of Adopting Soil Health Practices for Corn and Soybean - <i>Archie Flanders, Soil Health Institute</i>	Corn and Soybean Economic Analysis for Soil Health Management Systems - <i>Archie Flanders, Soil Health Institute</i>	Rotational Grazing Management Practices: An Assessment of Economic and Environmental Outcomes and Explanations for Low Adoption Rates - <i>Hongli Feng, Iowa State University</i>
Conservation Models, Tools, and Technologies	A Decision-Support Tool to Design Subsurface Drainage Systems for Water-Quality Protection - <i>Ehsan Ghane, Michigan State University</i>	Building Trust While Understanding Complexity: Process Models for Edge-of-Field Practices - <i>Catherine R. DeLong, Iowa State University Outreach and Extension and Former Soil and Water Conservation Society</i>	Driving Decisions with Data: Using an Interactive Interface to Predict Conservation Practice Effectiveness - <i>Sarah Blount, American Farmland Trust</i>	Integrating the Agricultural Conservation Planning Framework into Watershed-Scale Conservation Planning: Guidance for the NRCS and Conservation Partners - <i>Emily M. Usher, Purdue University</i>
Social Sciences Informing Conservation	Nonoperator Landowner vs. Tenant Perspectives on Agrienvironmental Issues and Landlord-Tenant Relationships - <i>Derek Franklin, Iowa State University</i>	Perspectives on Nutrient Management Planning: Survey of Soil and Water Conservation Staff in Upper Mississippi River Basin States - <i>Kelly Shen, Duke University</i>	Promoting Conservation on Rented Farmland: Unraveling Information Networks and Messages for Non-Operating Landowners - <i>Pranay Ranjan, Purdue University</i>	The Conservation Practitioner Poll: An Annual Survey to Help Improve Conservation Engagement - <i>J. G. Arbuckle, Iowa State University</i>
Soil Health Resources, Indicators, Assessment, and Management	Impact of Cover Crop Seeding Rate and Soil Type on Biomass and Weed Suppression - <i>Donna S. Gentry, LSU AgCenter</i>	Impacts of One-Time Tillage Compared to No-Tillage on Soil Health in a Diverse Rotational Cropping System - <i>Devyn McPheeters, The Pennsylvania State University</i>	Microbial Community Dynamics and Functional Gene Diversity in Plots Managed with Cover Crops and No-Till Farming in the Mississippi Alluvial Valley- <i>Alexandra G. Firth, Mississippi State University</i>	Soil Microarthropod and Entomopathogenic Nematode Diversity in Native Grass and Wildflower Meadow Trial Plots in the Hudson Valley, New York - <i>Jessica Furlong, SUNY Cobleskill</i>

2:30 PM - 3:00 PM	Afternoon Break			
3:00 PM - 4:30 PM	Symposia Sessions			
Adapting Landscapes to Climate Change	Using Woody Feedstock Biochar to Increase Climate Change Resilience - <i>Carlos Rodriguez-Franco, USDA Forest Service</i>			
Conservation Economics and Policy	Redesigning the Conservation Stewardship Program to Build Resilience and Mitigate Climate Disruption - <i>Jeff Schahczenski, National Center for Appropriate Technology</i>			
Justice, Equity, Diversity, and Inclusion	The Civic Scientist - <i>Erin Meier, Green Lands Blue Waters</i>			
One World, Connected through Conservation	Visionary Conservation: Science and Practice - <i>Francisco Arriaga, University of Wisconsin-Madison</i>			
3:00 PM - 4:30 PM	Oral Presentations			
	3:00 PM	3:23 PM	3:46 PM	4:09 PM
Conservation Economics and Policy/ Social Sciences Informing Conservation	Applying Farmer Identity Social Science Research to Encourage the Adoption of Ag Tile-Treatment Wetlands to Reduce Nutrient Loss - <i>Jean McGuire, The Wetlands Initiative</i>	Creating Opportunities for Climate Resilient Agriculture by Optimizing Federal Crop Insurance - <i>Laura K. Van Der Pol, Colorado State University</i>	Past and Future Local Weather: Farmers' Perceptions and Their Roles in Land Use Decisions - <i>Hongli Feng, Iowa State University</i>	Wetlands Protection and Planning: What Do Experts Say Constitutes "Good" Decision Making? - <i>Sarah Church, Montana State University</i>
Conservation Models, Tools, and Technologies	Interactive Simulator to Quantify Economic, Environmental and Societal Benefits of Cover Crops - <i>Suzanne Fey, Iowa Soybean Association</i>	Nitrogen Losses in Response to Conservation Practices and Sustainable Intensification in a Corn-Soybean Cropping System - <i>Bryan Emmett, USDA ARS</i>	Seeding Method Effect on Cover Crop Outcomes and Field Working Day Cost - <i>Katie Black, University of Minnesota</i>	Short-Term Nitrogen Fertility Benefits of Cover Crops on Spring Wheat Production - <i>David Archer, USDA ARS</i>
One World, Connected through Conservation	Building Resilience by Implementing the Three Key Goals of the Collaborative Eight-County Gulf-Houston Regional Conservation Plan - <i>Deborah January-Bevers, Houston Wilderness</i>	Evidence on the Private-Excess Fertilization Hypothesis - <i>Yuyuan Che, Michigan State University</i>	Stream Care for Streamside Landowners: A Collective Impact Approach to Community Conservation - <i>Jennifer Fear, Mecklenburg SWCD</i>	Use of Indicators of Soil and Water Quality to Monitor Shifts in Natural Resources and Climate - <i>Ann Marie Fortuna, USDA ARS</i>
Outreach, Education, and Community Engagement	All Aboard! Using "Theory of Change" to Cultivate and Grow Stakeholder Engagement - <i>Jean Brokish, American Farmland Trust</i>	Current and Future Impacts of Certified Crop Advisers on Conservation Practice and Technology Adoption - <i>Christopher Boomsma, American Society of Agronomy and Soil Science Society of America</i>	Leveraging Corporate Engagement to Enhance Conservation Implementation across Diverse Communities - <i>Ashley Brucker, American Farmland Trust</i>	Virtual Soil and Water Conservation Education Efforts - <i>Lee Riley, University of Arkansas System Division of Agriculture Cooperative Extension Service</i>
Soil Health Resources, Indicators, Assessment, and Management	Advancing Methods for Monitoring Field-Scale Soil Movement - <i>Jessica A. Nelson, Iowa State University</i>	Incorporating a Precipitation Factor into the Soil Vulnerability Index Classification - <i>Quang A. Phung, University of Missouri</i>	Soil Organic Carbon Sequestration Calculated from Depth Distribution - <i>Alan J. Franzluebbers, USDA ARS</i>	
4:30 PM - 5:00 PM	Conference Wrap Up - <i>Dale Threatt-Taylor, Soil and Water Conservation Society Chair, and Clare Lindahl, Soil and Water Conservation Society</i>			

WEDNESDAY, JULY 28

SYMPOSIA SESSIONS

Improving Water Quality in the Upper Snake-Rock Conservation Effects Assessment Project

11:00 AM – 11:25 AM CT

Moderator/Presenter: Dave Bjorneberg, USDA ARS

The Upper Snake-Rock (USR) watershed is located in southern Idaho and is part of the USDA ARS Conservation Effects Assessment Project (CEAP), which focuses on water quantity and quality monitoring in the 82,000 hectare Twin Falls irrigation tract. The Twin Falls Canal Company (TFCC) has been diverting irrigation water from the Snake River and delivering it by gravity to farms since 1905. The hydrology in this watershed is highly managed because the amount of irrigation water diverted into the watershed is five times greater than annual precipitation. Most streams only flow during the irrigation season. A portion of unused irrigation water, runoff from furrow irrigated fields, and subsurface drainage returns to the Snake River.

Sediment in irrigation return flow, primarily from furrow irrigation erosion, was a chronic problem in the Twin Falls irrigation tract. Cooperative efforts by TFCC, conservation districts, and state agencies have dramatically improved water quality by converting to sprinkler irrigation, installing water quality ponds, and improving irrigation practices. In 1971, 460 kg/ha of sediment were lost from the watershed annually. Currently, more sediment flows into the watershed with irrigation water than returns to the Snake River. This virtual tour will highlight the irrigation distribution system, unique drainage tunnels, and implemented conservation practices.

Virtual Field Day: Increasing Wetlands and Oxbows = Improved Water Quality and More Wildlife

11:25 AM – 12:30 PM CT

Moderator: Ann Staudt, Iowa Learning Farms—Iowa State University

Presenters: Matthew Helmers, Conservation Learning Group—Iowa State University; Kay Stefanik, Iowa Nutrient Research Center and Conservation

Learning Group—Iowa State University; Adam Janke, Conservation Learning Group—Iowa State University Extension and Outreach; Jake Hansen, Iowa Department of Agriculture and Land Stewardship—Water Resources Bureau

The Iowa Learning Farms, in partnership with the Conservation Learning Group and the Iowa Nutrient Research Center will be presenting a virtual field day on the benefits of increased wetlands and oxbows in the Midwest. Join us as we explore a few different wetlands and oxbows in the state, look at funding programs, and hear about the water quality benefits. In addition, we will look at how these wetlands and oxbows can add needed wildlife habitat in key locations. This highly interactive virtual field day will be a discussion between landowners, scientists and wildlife specialists, and all the participants at the session. The virtual field day will have video from the specific sites, and we will also feature a short video of the Iowa Learning Farms new Wetlands Conservation Station that started rolling across Iowa in June of 2021.

USDA Climate Hub Adaptation and Mitigation Showcase

11:00 AM – 12:30 PM CT

Moderator: Caiti Steele, Southwest Climate Hub

The USDA Climate Hub network strives to develop and deliver science-based, region-specific information and technologies so that agricultural and natural resource land managers are empowered to make climate-informed decisions. The program does this by connecting USDA Research Agencies to Program agencies to build resilience to a changing climate. The Climate Hubs Program, established in 2014, is addressing the impacts of climate change on working lands via science synthesis, stakeholder engagement and technology transfer at 10 Hubs across the nation. In this symposium, we highlight novel regional solutions for climate adaptation and mitigation. Our short presentations highlight responses to climate impacts and extremes in critical topics such as water resources in the Southeast, soil health in the Southern Plains, climate-informed county planning in the Northeast, preparing for wildfire in the West,

managing forests for multiple benefits in Puerto Rico, and more. A short topical discussion session will follow each regional lightning presentation.

Presentation 1: Introducing the USDA Climate Hub Network – *Lauren Parker, California Climate Hub*

Presentation 2: Preparing for Wildfire and Drought in a Changing Climate – *Jessica Halofsky, Northwest Hub*

Presentation 3: Disturbance Impacts and Management Adaptation on Water Resources – *Emile Elias, Southeast Hub*

Presentation 4: Managing Soil and Water Conservation under Extremes: Supporting Decisions in the Midwest – *Dennis Todey, Midwest Hub*

Presentation 5: Economics of Climate Smart Soil Health Practices in the Northeast – *L. Knight, Northeast Hub*

Presentation 6: Opportunities and Barriers to Adopting Soil Health Practices as Natural Climate Strategies in California – *Devon Johnson, California Climate Hub*

Presentation 7: Land Management Strategies for Climate Adaptation in the Southern Plains – *Clay Pope, Southern Plains Hub*

Presentation 8: Innovative Agro-Climate Resources for the Great Plains – *Dannele Peck, Northern Plains Hub*

Presentation 9: Supporting Ashland County LWCD: Integration of Climate Adaptation into County Planning – *Dannielle Shannon, Northern Forests Hub*

Presentation 10: Building a New “Forest Culture” in the Caribbean to Better Manage for Ecosystem, Economic, and Cultural Benefits from Forests – *William A. Gould, USDA Caribbean Climate Hub*

Presentation 11: Peer-to-Peer Drought Response in the Southwest – *Emile Elias, Southwest Hub*

Ecosystem Services Market Consortium (ESMC): Enrollment Specialist Training for ESMC’s Market Program

11:00 AM – 12:30 PM CT

Moderator: Caroline Wade, Ecosystem Services Market Consortium

Presenters: Stacy Cushenbery, Ecosystem Services Market Consortium; Neville Millar, Ecosystem Services Market Consortium

ESMC is a nonprofit, member-based organization that will launch a national-scale ecosystem services market program for agriculture in 2022. This program will pay farmers and ranchers for quantified, verified, certified, and outcomes-based soil carbon, net greenhouse gases, water quality, and water conservation credits and assets generated from regenerative agricultural practices. Enrolled farmers and ranchers will play an important role in improving agricultural system resilience and mitigating climate change, while being recognized and paid for their services.

Producer participation and comfort with this market program is essential. As part of this program, ESMC is developing materials to help train ESMC Technical Enrollment Specialists who will guide, advise, and help enroll prospective farmers and ranchers into the program. This session will guide attendees through these enrollment materials, provide an opportunity for feedback on ESMC’s training, and help participants better understand ESMC’s market program.

As ESMC works toward a national market launch, we look to partner with SWCS to offer this Technical Enrollment Service training. The technical assistance expertise offered by SWCS members has added value that can help advise producers on further optimizing their management systems, potentially generating additional environmental benefits through ESMC’s market-based program.

Missing in Action: A Failure to Deploy Women Landowners

11:00 AM – 12:30 PM CT

Moderator: Jean C. Eells, E Resources Group, LLC

Presenters: Ed Lotterman, Lotterman Farm; Dan Zinkand, DZC, LLC

Any initiatives to advance goals for agricultural conservation to address food security, climate change, complex water issues, and rural community resilience must address the greater diversity of decision makers including women landowners. In Iowa alone the value of land owned or co-owned by women exceeds \$100 billion. Yet major government, agribusiness, and most nonprofit organizations pay little or no attention to women who own farmland. And all too often they are lumped in with “landlords” even though the landlord is, in fact, often a woman. This session will discuss the system-wide gaps identified using Institutional

Ethnography. These gaps lead to the omission of women landowners from active roles they could and increasingly want to play in reaching soil health and eco-agricultural goals. This could be class action brought to service for good.

Integrating Climate Benefits into Conservation Planning: Engaging Local, Regional, and National Communities of Practice

11:00 AM – 12:30 PM CT

Moderator: Emily Bruner, American Farmland Trust

Presenters: Jennifer M. Moore, USDA ARS; Jean Brokish, American Farmland Trust

Accelerated adoption of soil health practices on cropland and grazing land offers an unparalleled opportunity to combat climate change, improve water quality, and build on-farm resilience and profitability. Despite a recent uptick in practice adoption, fewer than a third of the 260 million acres in US row crops are managed with no-till, while less than 5% use cover crops, according to the 2017 Census of Agriculture.

American Farmland Trust (AFT) recently released a report summarizing the technical capacity of cover cropping and no-till to sequester carbon and reduce greenhouse gas emissions (GHGs), providing a comparison of GHG emission reduction coefficients from previous meta-analyses and modeling studies conducted across the United States. We also used the Carbon Reduction Potential Evaluation (CaRPE) Tool to estimate climate benefits generated from a scenario in which farmers maintain existing practices and grow cover crops on an additional 15% of row crop acres and adopt no-till/strip till on 25% of acres currently managed with intensive or reduced tillage.

Integrating potential climate benefits into traditional conservation planning can help leverage additional financial resources and engage a broader audience in management discussions. AFT's Midwest Office partnered with over 30 organizations to establish a community of practice centered around building confidence in navigating these opportunities.

During this 90-minute symposium, we will (1) unravel the state of the science surrounding climate benefits of soil health practices; (2) provide a tutorial overview of how to use the CaRPE tool to run scenarios to meet climate goals; and (3) share insights from our work engaging stakeholders across local, regional,

and national scales. Collectively, these sessions will help inform future management of our soil and water resources by fostering consensus around the climate mitigation benefits of soil health practices.

From the Field to the Lab: Inside the Iowa Soybean Association's Water Monitoring Program

1:00 PM – 1:45 PM CT

Moderator/Presenter: Anthony Seeman, Iowa Soybean Association

The Iowa Soybean Association (ISA) has a certified water lab that analyzes thousands of samples from rivers, streams, individual tile outlets, and edge of field practices from around the state of Iowa each year. Partnerships with local watershed projects, producers, and importantly, the Agriculture Clean Water Alliance (ACWA), a nonprofit association of ag retailers and support companies in the Des Moines and Raccoon River basins, among others, have allowed this expansive work to occur for over 20 years. This information is used to target areas for conservation planning and implementation projects. It's also provided to individual farmers to assess their operations. As Iowa farmers focus on strengthening and improving the opportunities for profitability from their fields, many are using water monitoring as an important management tool. ISA's water monitoring also helps evaluate the effectiveness of installed conservation practices on water quality. This session will take attendees from the field to the lab to experience the complete cycle from sample collection, analysis, and result interpretation. See firsthand best management practices for taking samples and conducting other infield monitoring methods. Learn how samples are properly stored and analyzed with a tour of ISA's certified water lab. Lastly, discover how results are shared with producers and other stakeholders so that conservation and management decisions can be driven by science.

International Perspectives on Deforestation: The Solar Cooking Solution

1:45 PM – 2:30 PM CT

Moderator: Peg Barratt, Solar Cookers International

Presenter: Zainab Syed, Solar Cookers International

View a live demonstration of solar cooking. Wood, charcoal, and other biomass fuels are used by billions of cooks worldwide; deforestation and desertification are the discouraging results.

Solar thermal cooking can save those forests, reduce climate change, and consequently reduce desertification of agricultural land. More than half of the deforestation in sub-Saharan Africa is attributable to trees cut for firewood and charcoal. More than half of the forests in Nigeria have been lost in the last five years. Kenya, for example, is only 6% forested. More solar cooking means fewer trees cut, and the retained forests can help reduce climate change. Wood that decomposes naturally, instead of being burned, enriches soil.

Currently there are more than 3 million documented solar cooks, but this is few compared to the 3 billion cooks using biomass fuels. Solar cooking captures free clean energy most days. Each solar cook, even using the sun only part time, saves a ton of wood annually. Solar cooking and solar pasteurization also protect health and save time and money.

If you concentrate sunlight, you can cook! We will demonstrate (a) a panel cooker—cooks like a crockpot, (b) a box cooker—cooks like an oven, and (c) a parabolic cooker—cooks like a gas burner. Inexpensive homemade, locally made around the globe, and commercial models are all effective solar thermal cookers at various price points.

Solar Cookers International is a not-for-profit resource: the Solar Cooking Wiki provides information worldwide. A demonstration project in the Kakuma Refugee Camp in Kenya has showed the feasibility of training new solar cooks. Advocacy efforts encourage national energy policies to include solar cooking. Research efforts include developing performance standards for solar cookers and establishing four global testing centers.

Solar cooking brings renewable energy to families and is a vital initiative in combating deforestation. Join us to see this in action!

Avoiding Conservation Trade-Offs in Controlling Phosphorus Loss from Agriculture

1:00 PM – 2:30 PM CT

Moderator: Andrew Sharpley, University of Arkansas

Conservation practices are intended to address a specific resource concern. For water and soil resources, conservation practices intended to improve one resource often affect the other resource, leading to unintended consequences. Minimizing these concerns requires a holistic consideration of trade-offs and systems of conservation practices that balance these trade-offs. Conservation practices are essential to reduce nutrients, in particular, and sediment in order to protect water quality. However, practices applied in different contexts cannot be expected to provide universal benefits and may even have antagonistic effects. This symposium will describe the unintended consequences of conservation practices and offer innovative solutions to successfully mitigating phosphorus (P) runoff. For instance, no-till can increase soluble P runoff, and vegetative buffers can transition from sinks to sources of P in runoff. These conservation trade-offs depend upon context, but may occur even when systems of conservation practices are implemented. Measures that can be taken to minimize or overcome trade-offs will be discussed. Ultimately, acknowledgement of trade-offs by the conservation community is necessary to improve outcomes.

Presentation 1: General Introduction – *Lisa Duriancik, USDA NRCS*

Presentation 2: Introduction to Conservation Trade-Offs – *Andrew Sharpley, University of Arkansas*

Presentation 3: Trade-Offs Associated with Conservation Practices Avoiding the Loss of P – *Nathan Nelson, Kansas State University*

Presentation 4: Trade-Offs Associated with Conservation Practices Controlling the Loss of P – *Amy Shoher, University of Delaware*

Presentation 5: Trade-Offs Associated with Conservation Practices Trapping the Loss of P – *Peter Kleinman, USDA ARS*

Integrating the NTT Water Quality Tool into the COMET-Farm Greenhouse Gas Assessment Tool for Co-Benefits Analysis

1:00 PM – 2:30 PM CT

Moderator: Adam Chambers, USDA NRCS

Since 2014 the COMET-Farm modeling platform has been available for public use in assessing the greenhouse gas balance of cropland, grassland, animal agriculture, agroforestry, and forestry practices. Funded by the USDA NRCS, the USDA Climate Change Program Office (CCPO), and a variety of other state and private entities, COMET-Farm was first designed to assess how NRCS conservation practices affect the carbon and greenhouse gas balance of cropping systems. Nutrient Tracking Tool (NTT) was recently developed by a modeling team at Tarleton State University (TSU) to assess the water quality/quantity and crop production as affected by farm management practices. The COMET-Farm team, in collaboration with partners at TSU, the Soil Health Institute, the USDA, and CCPO, at Colorado State University has incorporated additional ecosystem assessment capabilities that utilize the data entered into the COMET-Farm tool. These include greenhouse gas inventories, the effects of conservation practices on soil water holding capacity, and most recently water quality/quantity linked to runoff/leaching/erosion using NTT program. During this presentation members of the COMET-Farm and NTT teams will describe the COMET, NTT, and integrated COMET-NTT tools and present examples of field-scale assessments of multiple ecosystem services, including greenhouse gas mitigation, water quality improvements, and cropping system resilience.

Presentation 1: Estimating Carbon and Water Quality Co-Benefits of Conservation Practices – *Adam Chambers, USDA NRCS*

Presentation 2: Nutrient Tracking Tool: A Tool for Estimating Water Quality Benefits of Conservation Practices – *Mindy Selman, USDA Office of the Chief Economist–Office of Energy and Environmental Policy; Ali Saleh, Tarleton State University*

Presentation 3: COMET-WQ: A Combined Tool for Estimating Carbon and Water Quality Benefits of Cropland – *Haley Nagle, Colorado State University; Crystal Toureene, Colorado State University*

Reaching a Broader Conservation Audience in the Time of COVID-19

1:00 PM – 2:30 PM CT

Moderator: Stephanie Mercier, Farm Journal Foundation

This symposium presents the results of an ongoing private-public partnership between Trust In Food (TIF) and NRCS established to address the issues of clearly communicating the benefits of conservation agriculture and helping newly interested producers to successfully adopt conservation systems. The partnership combines the *Farm Journal's* communication expertise and large farmer audience with NRCS's technical expertise and conservation delivery system. The agreement between NRCS and TIF was signed in February 2020 and called for TIF to work in five pilot outreach areas to bring new producers to NRCS and to make the farmer experience with NRCS more successful and efficient. This was to be accomplished by TIF holding a conservation event for producers in each water quality outreach area that addressed the primary resource concern in the water quality outreach area, and by producing a series of three workbooks on conservation planning, soil health, and water quality. A related objective was to build peer-to-peer and farmer mentorships within the water quality outreach area, and Conservation Stewards were to be enlisted in the outreach areas. The events were originally envisioned as face-to-face meetings demonstrating conservation systems appropriate for addressing natural resource issues of concern in the water quality outreach area; however, the COVID-19 pandemic erupted shortly after the project was launched and in person meetings became infeasible. The symposium will present how the project adapted to the new state of the world and identify organizing practices that were successful and those that required additional adjustment.

In examining progress after the first year of a two-year project, five Zoom events have been conducted, recorded, and are available for viewing on the Internet, two workbooks completed, five blogs posted, and six Conservation Stewards enrolled in four outreach areas. Data on event participation and demographics and website hits were gathered. In addition, Zoom participants were asked to respond to a survey. Statistics of engagement for the events, workbooks, and blogs have been collected and are being analyzed. The project has increased the

interest in conservation in the five outreach areas, but also enabled us to identify several areas where remote (web-based) outreach can be more effective. These include closer coordination with Conservation Stewards, NRCS, and other partner organizations within the water quality outreach area, increased technical support on the TIF website, and greater flexibility in event formats.

Presentation 1: Expectations and Preliminary Design for the NRCS: Trust In Food Conservation Outreach – *Daniel Dostie, USDA NRCS*

Presentation 2: Adapting Outreach Efforts in the Time of COVID-19 – *Skip Hyberg, H&H Conservation*

Presentation 3: Preliminary Results from the First Year of the NRCS Trust in Food Project – *Kinsie Rayburn, Trust In Food*

Enhancing Natural Hazard Resilience through Nonpoint Source Management

1:00 PM – 2:30 PM CT

Moderator: Ellie Flaherty, US Environmental Protection Agency

Presenter: Cyd Curtis, US Environmental Protection Agency

Polluted runoff is the dominant water quality problem facing the nation today. Nonpoint pollution (NPS) is diverse and includes agricultural runoff, acid mine drainage, unpermitted urban runoff, and more. Under Section 319 of the Clean Water Act (CWA), states, territories, and tribes receive grants to implement their NPS programs. This work has restored over 10,500 miles of stream and over 250,000 acres of lakes since 2005. Examples of practices funded through the §319 program include floodplain and stream restoration/stabilization, wetland creation, reforestation, and agricultural conservation practices. In addition to improving water quality, these nature-based practices can create co-benefits by mitigating hazards including drought, flood, erosion, and harmful algal blooms.

This symposium will include an overview of EPA's §319 NPS Grants Program and a look at §319 success stories and NPS program highlights. Participants will learn about current factors influencing the Section 319 program administered by EPA, including program updates, nonpoint source management plans, how agricultural and soil health practices

can promote resilience to natural hazards, and watershed-based planning.

Using Woody Feedstock Biochar to Increase Climate Change Resilience

3:00 PM – 4:30 PM CT

Moderator: Carlos Rodriguez-Franco, USDA Forest Service

This symposium will discuss biochar markets development and how biochar can help to improve agricultural soils and develop carbon (C) markets, with gains for forestry, agroforestry, and agriculture for restoring and increase soil and crop productivity. Biochar is an emerging commercial product with high potential for a wide variety of applications. We will also discuss how woody biochar could be beneficial on all federal lands by increasing resilience for better adaptation to climate change, increasing forest productivity, decreasing insect and disease attacks, and increasing other environmental benefits such as C sequestration and water retention. High-C biochars, when used as a soil amendment, are a perfect tool for sequestering C within the mineral soil. If biomass is sustainably harvested, biochar supply chains can be C-negative. Furthermore, when net C balance in the forest ecosystem is positive, biochar can actively remove atmospheric CO₂, with potentially major implications for mitigation of climate change.

Presentation 1: Current Status of Biochar Markets – *Tom Miles, US Biochar Initiative*

Presentation 2: Increasing Soil Health with Biochar – *Debbie Page-Dumroese, USDA Forest Service*

Presentation 3: Forest Management to Increase Biochar Production – *Carlos Rodriguez-Franco, USDA Forest Service*

Redesigning the Conservation Stewardship Program to Build Resilience and Mitigate Climate Disruption

3:00 PM – 4:30 PM CT

Moderator: Jeff Schahczenski, National Center for Appropriate Technology

Presenters: Doug and Ann Jones Crabtree, Vilicus Farms; Jeff Schahczenski, National Center for Appropriate Technology; Cristel Zuebisch, National Sustainable Agriculture Coalition; J.V. Worstell, Resilience Project

Farmers and ranchers can substantially contribute to climate change adaptation and mitigation while improving system resilience by sequestering carbon and reducing greenhouse gas emissions at minimal cost. In January of 2021, President Biden released an executive order that, in part, directs the Secretary of Agriculture to garner input from farmers, ranchers, and others “on how to use federal programs to support adoption of climate-smart agriculture practices.” One federal conservation program was highlighted in President Biden’s climate plan as the centerpiece to support farmer and rancher climate change adaptation and mitigation efforts—the Conservation Stewardship Program (CSP). With over 8% of agricultural land enrolled in the CSP, it is the largest working lands conservation program in the United States and has great potential to expand climate-friendly systems and practices. In this symposium, we explore how CSP can be redesigned, reformed, and revamped to meet this challenge. The panel will include four presenters covering the following topics:

- An overview of CSP, including analysis of latest enrollments, discussion on the operations that have typically benefited in the past.
- A review of legislative and administrative actions that can make the CSP more climate directed.
- How CSP enables ecologically resilient agriculture production systems built on adaptability, diversity, and soil and plant infrastructure.
- Promises, limitations, challenges in modifying the Conservation Assessment Ranking Tool (CART) to improve CSP to address climate disruption.
- Farmer’s view of climate-smart agricultural practices. What practices really work to build soil organic matter, make farming systems more resilient to climate variability, and—most importantly—eliminate dependence on nitrogen fertilizers and pesticides that are responsible for the vast majority of agriculture’s greenhouse gas footprint.

The Civic Scientist

3:00 PM – 4:30 PM CT

Moderator: Erin Meier, Green Lands Blue Waters

Presenters: Katie Black, University of Minnesota; Maria Hetman, University of Missouri; Sienna Nesser, University of Minnesota; Huong Nguyen, Iowa State University; Kyle Sherbine, University of Minnesota

Last year, months into a global pandemic and weeks after global civil rights protests rocked their cities, a diverse group of 18 graduate students in ag-related programs across the Midwest were tasked with reflecting on their experiences as young scientists in the midst of unprecedented societal change. They were asked by Green Lands Blue Waters to share where they find hope and what they envision for the future. GLBW has been sharing their essays with its network via newsletters and social media as “The Civic Scientist” series- <https://greenlandsbluwaters.org/civic-scientists-series/>.

While the scope of the Civic Scientists’ statements vary, several common themes emerged from this collection of writings. These include emphases on:

- Justice and equity—“I have understood the past six months, in some ways the past 400 years in this way: The world was cracked. We all lived year after year, stepping over or avoiding many deep fissures.”
- Challenging the status quo—“In my dream world, I would like to see more diversity and perenniality across all landscapes, such as prairies replacing lawns ... more home and community gardens.”
- Optimism in changing times—“I encourage everyone...to take a look at what Black farmers and activists around the country are doing. They have been providing me sparks of hope when I question the efficacy of my work.”
- Understanding that scientific research does not exist in a vacuum—“Solving problems is more than just applying knowledge to find a solution, but understanding the implications different results may have.”

In this session, several Civic Scientists will offer their reflections on this experience as next-generation agricultural professionals a year after the events that inspired their writing. They will engage participants in an active discussion informed by how equity, diversity, and justice tie into their own research projects, their perspectives on building a diverse research workforce, and what it means to be a “civic scientist.”

Visionary Conservation: Science and Practice

3:00 PM – 4:30 PM CT

Moderator: Francisco J. Arriaga, University of Wisconsin-Madison

Soil and water conservation efforts in North America were put into drive after the Dust Bowl in the 1930s; however, after these many decades we continue to find new challenges and solutions. Scientific and technological advances have been important, as well as putting practices on the ground and policy. This symposium will cover recent cutting-edge efforts in soil and water conservation, targeting scientists and practitioners. Research and implementation of these efforts will be discussed during this symposium. This symposium will also be presented during the 2021 Soil Science Society of America International Meeting and sponsored by the Soil and Water Conservation and Management Division.

Presentation 1: Historical Technological Advances in Soil and Water Conservation from the 1930s to the Present – *Jorge Delgado, USDA ARS*

Presentation 2: Regional Modeling of Soil Erosion and Water Runoff: Daily Erosion Project – *Richard Cruse, Iowa State University*

Presentation 3: Well-Managed Grazed Perennial Grasslands for Profitable Farming, Soil Accumulation, Clean Water, and Biodiversity – *Randy Jackson, University of Wisconsin-Madison*

Presentation 4: Use of Vulnerability Assessment to Support Conservation Planning for Soil and Water Resources: The CEAP Soil Vulnerability Index – *Lisa Duriancik, USDA NRCS*

Presentation 5: Identifying Opportunities for Conservation Practice Placement to Enhance Soil Health and Water Quality: The Agricultural Conservation Planning Framework (ACPF) – *Emily Zimmerman, Iowa State University*



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2021 SWCS AWARDS

Congratulations to the 2021 SWCS award winners!

Visit the Award Winners tab of the event platform to view this year's award winners.

INDIVIDUAL AWARDS

Hugh Hammond Bennett Award

The Society's most prestigious award, recognizes extraordinary accomplishments in the conservation of soil, water, and related natural resources.



Michael Kucera

The Hugh Hammond Bennett Award is presented to Michael Kucera for his widely recognized, major contributions to the conservation of natural resources. Professionally, Kucera has served in various capacities with the USDA Natural Resources Conservation Service (formerly the Soil Conservation Service) since 1981, rising the ranks to serve as the Nebraska State Resource Conservationist, and the Nebraska State Agronomist and State Water Quality Specialist. He is currently supporting national erosion prediction technology at the National Soil

Survey Center as the National Erosion Database Steward. Beyond his primary work duties, Kucera is recognized for his development of Soil Health Buckets as an educational tool to teach high school agricultural science students the importance of soil health and natural resource conservation. This effort earned him an Honorary State FFA Degree, the highest award a state FFA organization can bestow. He has been recognized for his role in international efforts to bring soil health and watershed planning education to Pakistan, as he was awarded the Abraham Lincoln Honor Award by the USDA Secretary of Agriculture. Through his tenure with USDA, Kucera has been the consummate professional whose career has wholeheartedly supported the goals and objectives of the Society. For these efforts, SWCS is proud to present Kucera with the Hugh Hammond Bennett Award.

Fellow Award

In recognition of SWCS members who have performed exceptional service in advocating the conservation of soil, water, and related natural resources. Fellowship is an honor bestowed upon the best in the conservation profession.



Craig Derickson

Craig Derickson has been a member of SWCS for more than 40 year and has served in several chapter leadership positions in the Nebraska Panhandle Chapter as well as national SWCS roles. He most recently served on the SWCS Science and Policy Committee until his retirement in December of 2020 and served on the Nutrient Management Committee. Derickson has been a well-respected national leader with NRCS, serving in positions in several states and in the national office in Washington, DC. He most recently served as the national co-chair of the NRCS of the Future, an

organizational improvement project under Acting Chief Leonard Jordan. At the same time, he served as co-chair for the National Civil Rights Advisory Committee to the Chief under Chief Matt Lohr. Under Derickson's leadership and direction, the committee provided policy and advisory support on civil rights and equal opportunity matters. As an NRCS leader, he was a strong proponent of membership in numerous professional organizations, especially SWCS, and encouraged professional development among NRCS staff. In 2019, Derickson led an effort to create a successful multistate NRCS leadership development program, Cultivating Future Leaders, for NRCS employees in Nebraska, Iowa, and Minnesota. He was often the kick-off speaker for NRCS Boot Camp training sessions in Lincoln, Nebraska, and encouraged NRCS and district employees from

across the country to seriously consider their responsibility as professional conservationists helping people accomplish their conservation objectives. Derickson has been awarded several prestigious awards including the USDA Secretary of Agriculture's "Honor Award" and the 2019 "Outstanding State Conservationist of the Year" by the National Association of State Conservation Agencies (NASCA). For his dedication to the SWCS and his achievements with the NRCS and more, Derickson is well deserving of the 2021 SWCS Fellow Award.



Don Wysocki

Don Wysocki has worked at Oregon State University since 1986 focusing on soil and water management in dryland cropping systems and conservation farming where he has conducted numerous field trials and field days. He has established a widely renowned research and extension program and has been a leader in soil conservation and crop management. Wysocki has authored and coauthored dozens of impactful peer reviewed publications, including extension publications, in the areas of statistics, plant pathology, crop breeding, biofuel production agronomy, alternative crops, soil fertility, irrigation management, and conservation farming in direct seed (no-till) cropping systems. He is

recognized regionally and nationally as a leader in conservation farming systems and oilseed agronomy. Through his work, several projects have promoted the adoption of soil and water conservation practices in the Pacific Northwest, while at the same time enabling profitability in dryland farms. In 2000 Wysocki co-founded the Pacific Northwest Direct Seed Association (PNDSA) where he serves on its board of directors. The PNDSA is a grower-led, nonprofit organization that provides information exchange and advocacy on conservation policy issues, research coordination, and access to value-added benefits that support the adoption of environmentally sustainable and economically viable direct seed cropping systems. Wysocki has been a continuous member of SWCS since 1987. As an undergraduate, he was a member of the University of Wisconsin-Stevens Point Student Chapter and assisted in forming the student chapter at Iowa State University in the 1980s. He later served as president and executive board member of the Oregon Chapter. Wysocki has served SWCS at the national and international level in several capacities including vice-president of the Society in 2008 and treasurer of the Society between 2018 and 2020. He served several terms as the western regional board director covering western states and was first regional board director for the newly consolidated northwest region representing the US states and Canadian provinces (2014 to 2020). For his dedication to the SWCS and his professional achievements and more, Wysocki is most deserving of the 2021 SWCS Fellow Award.



Lynn Betts

Lynn Betts worked with USDA NRCS for 35 years where he was nationally recognized for his photographic talent. He was also a crops editor for *Iowa Farmer Today* newspaper from 1993 to 2003. In the early 2000s, Betts's excellence as a photographer also led SWCS to have him shoot photos for the Conservation Media Library. Most of the 600 photos in the online SWCS Conservation Media Library that SWCS offers free to media and other users were taken by him. After his retirement from NRCS, Betts and his wife, Candace, formed Publication Services, which provides writing, still photography, video, and other services in conservation and natural resources. As a freelance writer based in Iowa, he has often submitted stories to *Wallace's Farmer* magazine, which serves more than 40,000 farmer-subscribers in the state of Iowa and often carried by many other sister magazines

in the Corn Belt, the Atlantic Coast, and the Southeast. During the drought that decimated much of the United States in 2012, Betts wrote an article on how farmers could successfully use cover crops. This article not only ran in *Wallace's Farmer* in Iowa, but also in other magazines in the Corn Belt, the Atlantic Coast, and the Southeast which served more than 300,000 farmer-subscribers. His expertise as a professional conservationist has long been recognized by the editors of national agricultural magazines, including that of *Progressive Farmer* magazine and *Corn and Soybean Digest* magazine. Betts has received many awards at the state and national level, both within USDA and from other organizations for his work on information/education materials. These include USDA's Distinguished Service Award, the National Wildlife Federation's National Communications Award,

and the National Association of Conservation District's Professional Service Award. He has been a member of SWCS for 40 years, serving on the SWCS editorial board and election ballots committee in recent years. For his dedication to the SWCS and his professional achievements and more, Betts is most deserving of the 2021 SWCS Fellow Award.

Conservation Innovation Award

In recognition of an outstanding activity, product, or service by a group, business, firm, corporation, or organization that promotes natural resource conservation.



Area IV Cooperative Research Farm

The Area IV Soil Conservation District Cooperative Research Farm in Mandan, North Dakota, is being recognized for its service to the northern United States and Canada for the significant contribution to long-term soil and water conservation research and for providing and developing sound conservation practices for implementation throughout the region. Research-based evidence of on-farm demonstrations is often lacking. Working with the Burleigh County Menoken Farm and innovative farmers, the USDA Agricultural Research Service scientists at the Northern Great Plains Research Laboratory support practical innovation through credible, long-term, statistically significant research at the Area IV Cooperative Research Farm.

Due to the region's unpredictable climate—characterized by short, erratic growing conditions and limited rainfall challenges—there have been calls for increased investment in long-term cropping systems research. Established long-term research sites like the Area IV Cooperative Research Farm occupy a special role to address this call. Since its inception, the Research Farm has served as a focal point for improving the sustainability of dryland cropping systems through team-focused, systems-oriented research and technology transfer. The Research Farm has fostered an evolution of cropland conservation in the Northern Plains through effective research and outreach. Translating research findings into usable information for agricultural clientele has been a central tenet of the research farm since its establishment. Additionally, creating decision support tools that play an important role in transferring research findings to the agricultural community has led to the overall success of the Area IV SCD Cooperative Research Farm for the last 36 years.

In 36 years, the unique collaboration between these organizations has advanced the scientific basis of innovative farming practices and improved the environment and farm income across the Northern Great Plains.



Conservation Station Mobile Education Trailer Program

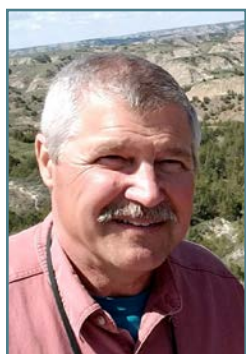
The Conservation Station (CS) fleet of four educational trailers from Iowa State University Extension and Outreach's (ISUEO) Iowa Learning Farms (ILF) and Water Rocks! (WR!) programs, are highly innovative and engaging, and worthy of recognition for their exceptional contributions to natural resources education and outreach in the state of Iowa. Through engineering, art, and science, the Conservation Stations create an immersive experience inspiring visitors to care about our natural resources, specifically soil and water, and share ways that these resources can and should be protected.

This group has found that appealing to broad audiences beyond farmers and landowners has a magnified impact on awareness and interest in conservation issues and practices and understand that farmer and landowner outreach is more effective when multigenerational community outreach is a part of the strategy. Family, friends, and neighbors are part of the interwoven threads that make up farmers' social networks. This includes youth and nonfarming members of the local community. Because of this, the Conservation Stations provide a comprehensive learner-centered platform to encourage multigenerational visitors to be active participants in exploring the interconnectedness of the natural resource world around them. These organizations have improved programming content and offerings to ensure the greatest impact at each venue, whether that be

community celebrations/festivals, fairs, farmers markets, youth camps, school events, or other public venues throughout the year. Each Conservation Station includes audience-centric programming so content can be modified to best suit the local audience and can ensure it is appropriate and relevant to all age groups and vocational, professional, and demographic groups present. This flexibility is built in to ensure the most effective delivery of information regarding soil, water, and natural resource conservation issues and practices helping each group to gain deeper insight into the natural world around them. In doing so, they are impacting land management choices, both urban and agricultural, on water quality and creating connections between the state's water, soil, and wildlife resources creating a passion and purpose for those involved and a vision of the connectedness of nature for future generations.

Harold and Kay Scholl Excellence in Conservation Award

In recognition of individuals who work on the ground to provide direct and personal delivery or conservation planning and technical assistance.



Jon Stika

Jon Stika is a retired soil scientist and soil health instructor with USDA NRCS and now agricultural technician at North Dakota State University–Dickinson Research Extension Center. He has provided direct conservation assistance to landowners, communities, and units of government. As a result of his work with NRCS, nearly all the cropping systems in western North Dakota are now no-till, which has greatly reduced wind erosion, minimized water runoff, and restored soils. Stika is now providing technical assistance to producers to improve their conservation systems and resources. He makes multiple presentations a year to speak at various soil health functions where he emphasizes the use and application of cover crops, rotation and diversity, soil management techniques, and other methods

to build soil health and protect the soil resource. Many of these practices protect the soil and water quality, provide food and habitat for wildlife, improve the aesthetics of the landscape, and project a positive attitude to the community. Stika's nearly 40 years of providing conservation excellence to producers, communities, and other professionals makes him well-deserving of the Scholl Award.

Conservation Professional of the Year Award

In recognition of outstanding accomplishments in practicing and advancing the science and art of natural resource conservation.



Jean Eells

Jean Eells has provided leadership for soil and water conservation for over 30 years as an independent consultant in Iowa. For 24 contiguous years, she has served as Hamilton Soil and Water District Commissioner, and 12 years on the State Soil Conservation Committee. Eells is a champion for women landowners in adopting conservation. She personally met with 3,500 women landowners in seven Midwest states in her doctoral research, and the programs she helped start have been duplicated and adapted both regionally and nationally by the Women Food and Agriculture Network, Pheasants Forever, and the American Farmland Trust, to name a few. A well-known volunteer organizer of the Loess Hills Prairie Seminar in Western Iowa for over 20 years, she has helped to educate on a topic important to conservation. An active member of SWCS, Eells has published

three peer-reviewed journal articles in the *Journal of Soil and Water Conservation* on key topics of adoption of conservation best management practices.

Society Service Award

In recognition of Society members for service to their chapter or to the Society.



Duane Friend

Duane Friend is an extension educator with Energy and Environmental Stewardship for University of Illinois Extension. He is an integral member to the SWCS Land of Lincoln Chapter. Friend has been a member of SWCS since 1988 and has served professionally in agricultural conservation through appointments with Illinois Soil and Water Districts, the Farm Service Agency, and the University of Illinois Extension. As an educator with University of Illinois Extension, he has focused on soil and water conservation programming through on-farm research with biochar, compost, and lake sediments as soil amendments; education modules for certified crop advisors; teaching of soil formation, soil health, cover crops; and showcasing a stream model for youth conservation days. Friend has been an

Illinois SWCS Chapter officer during two different time periods—once during 1996 to 1998 (president) and again during 2016 to 2018 (membership chair)—along with annual conference tour and forum coordinator, and presenter. He was the originator of the SWCS Land of Lincoln Chapter prescribed fire workshops, which began in 2019. The first Illinois SWCS prescribed fire workshop attracted 55 participants and was held in partnership with the Audubon Society's Bremer Sanctuary in Hillsboro, Illinois, including a prescribed burn demonstration. This workshop format has been repeated in 2020 and 2021 across Illinois and proves to be popular with landowners and conservation professionals. Friend's professionalism, strong work ethic, and dedication to soil and water conservation education is clear to anyone who meets him. To many in Illinois, he is a key face of SWCS.



Kelly Wolff

Kelly Wolff is the Habitat Evaluation and Lands Program Manager for the Arizona Game and Fish Department's Mesa office. She is involved with wildlife habitat evaluation, protection, connectivity, landscape scale restoration, management, enhancement, and environmental compliance within her region. Wolff has been with the department for over 16 years and in the wildlife field for nearly 20 years. She has been an active SWCS member since she joined the Arizona Chapter in 2005. She has been the Chapter secretary for 8 years, preparing agendas, minutes, and all Chapter correspondence with new members. Recently, Wolff has been able to bring so much more to the table for the Arizona Chapter, through

her abilities with social media and Zoom meetings. She is a devoted believer that there has to be overlap among professional organizations. She has many contacts with environmental, wildlife, conservation, and municipal groups. Wolff is the bridge between the Chapter and these different groups. She has organized several field trips highlighting conservation in Arizona. Some of these include hands-on field work to build ponds at Robin's Butte Wildlife Area, wildlife restoration, and looking at erosion and restoration on Horseshoe Ranch and Ben Avery Shooting range. Her knowledge has helped, tremendously and kept the Chapter connected in these difficult times. Wolff continues to provide exceptional volunteer service to the Arizona Chapter.



Leah Duzy

Leah Duzy is an agricultural economist and principal consultant with Compliance Services International, working on environmental challenges specifically with crop protection and chemical usage. She joined SWCS in 2002, as an employee of NRCS, and immediately assumed a leadership role within the Alabama Chapter. She has been the treasurer of the Chapter for many years. Duzy's youth and passion for conservation have driven the Chapter to a new level, with interest by emerging professionals. As a long-standing member, she has assisted countless president-elects to host and manage the annual meeting, which is a three-day educational event bringing multiple disciplines together for seminars and field tours. Many of the attendees are nonmembers, and they learn

about the organization and its opportunities. Duzy has provided the oversight for funding of the event as well

as handling registration. She has, also, managed tax preparation and website maintenance for the Chapter over the past 10 years. Additionally, her professional knowledge has been provided back to the Chapter as a resource to members. Duzy not only participates with the review of scholarship applications, but strives to improve the program and bring those applicants in as sponsored members. Leah is also exceptional with communication, keeping the Chapter active on current topics in the industry through emails, speakers at annual meetings, and website additions. Duzy has been an amazing volunteer, committed to natural resource conservation, and her service will keep the Alabama Chapter alive and viable for the future.

Chair's Leadership Award

In recognition of exemplary assistance in helping to carry out the goals and objectives of the Soil and Water Conservation Society.



Andrew Sharpley

Andrew Sharpley has gone above and beyond in his service to SWCS. He has served for multiple years on the Annual Conference Program Planning Committee and as chair of the Science and Policy Committee. He exemplifies SWCS's dual approaches to natural resource conservation—science and practice—as an internationally renowned researcher on phosphorus transport and the effects of agriculture on water quality, and as a co-founder of the Arkansas Discovery Farms Program at the University of Arkansas. “We are so grateful for Andrew’s dedication to the SWCS Science and Policy Committee,” states Clare Lindahl, SWCS CEO. “I could not have transitioned into leadership with SWCS without his active engagement with the committee.”



Catherine DeLong

Catherine DeLong served SWCS as staff for three years. She joined SWCS in 2016 and maintained her membership through her employment. DeLong came on to SWCS as the special projects director in 2018 and immediately increased the scope and geographical footprint of the grant program. After just three years on, her abilities and interest in policy led her to taking on advocacy work for SWCS and the new title, special projects and policy director. Her creativity and strong communication skills allowed SWCS to amplify the important work being done by headquarters staff and members in the conservation community. DeLong was esteemed as a team player among staff, always willing to assist to elevate any and all projects being done by SWCS, regardless if it was part of her department.

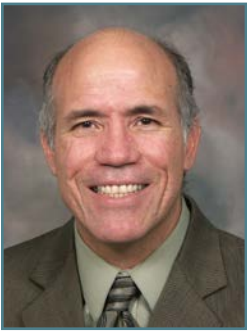
“Catherine contributed significantly to the growth of our grant program, bringing on new projects and partners through her work,” states Clare Lindahl, SWCS CEO. “The contribution she made to grow our team’s professional skills and bringing us together to work more effectively will have a lingering effect on our organization and its people.” Current SWCS Chair Dale Threatt-Taylor added, “We are grateful for the contributions Catherine has made to SWCS during her tenure and wish her all the best in her new endeavors.”



Iowa Chapter

Iowa Chapter SWCS

The Iowa Chapter was instrumental to ensuring the success of transitioning the 2020 Annual Conference from an in-person to virtual event within three short months. Without their assistance in planning virtual socials, providing volunteers, and serving in many other aspects, the event would not have been possible. Their contribution to the Society and the success of the 2020 Annual Conference is sincerely appreciated.



Jorge Delgado

Jorge Delgado served the Society and the *Journal of Soil and Water Conservation* for 20 years as the journal's research editor. During his tenure, he consistently improved the quality of the journal, bringing the journal impact factor up 216% as of 2019 and increasing trends in citations as of 2019 up 323%. Over 3,000 papers were reviewed under his guidance, and the journal was moved from mail/print correspondence to online tracking and subscriptions. Delgado also began the journal's well-cited series of special issues and worked to increase the international scope and impact of the journal and its Editorial Board. In 2020, Delgado co-chaired the SWCS 75th anniversary effort to publish a series of essays tracing the history of conservation in the United States. His outstanding efforts to establish the SWCS as a leader in conservation science publishing have had a profound impact on the organization and on the state of natural resource conservation knowledge.



Kris Johnson

Kris Johnson is the Interim Director of North American Agriculture with The Nature Conservancy (TNC). He has ignited a strong partnership between TNC and SWCS. These elevated relations have resulted in the creation of a nationwide initiative to scale up edge of field conservation practices, *Leading at the Edge: A Roadmap to Advance Edge of Field Practices in Agriculture*. Johnson has collaborated with SWCS staff on multiple outreach efforts around the roadmap. He contributed to a paper in the *Journal of Soil and Water Conservation* and lined up multiple speaking engagements for TNC and SWCS. Johnson became a member of SWCS and increased TNC's engagement in SWCS's Annual Conference, coming on as a supporter and exhibitor, and recruiting additional staff to present their work. "Kris is passionate about scaling up conservation and I don't know many people as conscious and considerate of the partnerships and actions that are required to make that happen," states Clare Lindahl, SWCS CEO. SWCS Chair Dale Threatt-Taylor became executive director of TNC South Carolina Chapter in early 2020. "I am extremely excited about the work that has been done between SWCS and TNC and what opportunities that holds for the future of our partnership and our natural resources," she states.



Rex Martin

Rex Martin served three years (2017 to 2020) as the chair of SWCS, during which he oversaw the transition to a new CEO and significant organizational growth. During his tenure as chair, SWCS expanded partnerships with agriculture, improved internal processes, and made significant technological advances. Martin served as a mentor for the incoming CEO. "Rex has been one of the most significant mentors of my career," states Clare Lindahl, SWCS CEO, "but what is more, I always look forward to seeing him!" Rex has been a member the President's Club since joining SWCS, served on the board from 2015 to 2021, and served as treasurer in addition to chair. He has also been a consistent contributor and promoter of the Society and its mission.

Martin served as Vice President of Governmental Relations for States Strategies, a leading Washington, DC, based consulting firm. Prior to that, he was Senior Vice President of Owner Relations at Dairy Management Inc. and also held numerous government and industry affairs positions at Syngenta. In 2018, he became CEO of the nation's leading agricultural fraternity, Alpha Gamma Rho (AGR). "Rex brought decisiveness and a deep organizational knowledge to the board," says current SWCS Chair Dale Threatt-Taylor. "SWCS will forever benefit from his leadership."

Conservation Research Award

In recognition of Society members or teams of members whose research has led to exceptional improvements in soil conservation, water conservation, and/or related natural resources research.



David Lobb

David Lobb is a professor in the Department of Soil Science at the University of Manitoba. Over the past 30 years, Lobb has developed a world-class research program on soil erosion and sedimentation. His research focuses on tillage erosion and extends to wind and water erosion in an effort to understand how soil erosion affects biophysical properties and processes on cultivated land and within larger landscapes and watersheds. Lobb has, and continues to make, significant advances in all aspects of his research, from measurement techniques, to management practices, to modelling. His research spans across North

America, extending into Central America and Asia. Lobb's research has produced 94 refereed journal articles, 13 refereed chapters in books, and numerous presentations including 84 invited conference presentations, in addition to other conference presentations, university seminars, and government presentations.



Marisol Berti

Marisol Berti is a professor of plant sciences at North Dakota State University whose research has encompassed a broad range of topics including forage and biomass production, cover crops, cropping systems for sustainable production, and life cycle assessment and environmental impact assessment of agroecosystems and industrial crops. Her research has produced over 82 peer-reviewed articles, 25 proceedings publications, 8 books, 3 book chapters, and over 200 authored or co-authored presentations or poster presentations. Recently, Berti has been the lead PI and coordinator of a USDA-NIFA-AFRI-CAP project that includes 12 researchers from four land-grant universities and 11

graduate students. This project, along with her active participation and leadership in the Midwest Cover Crops Council, has helped move cover crop research to broad acceptance of cover crops by farmers throughout the North Central region of the United States. Her impacts on our understanding of cover crop sustainability, cold hardiness, effectiveness, efficacy, and economics have made her as the go-to person for information.

JOURNAL OF SOIL AND WATER CONSERVATION AWARDS

Best Research Paper for Impact and Quality Award

In recognition for the impact and quality of a research paper published in the Journal of Soil and Water Conservation in the previous five years, as well as an Honorable Mention.

Best Research Paper for Impact and Quality Award

Finney, D.M., J.S. Buyer, and J.P. Kaye. 2017. Living cover crops have immediate impacts on soil microbial community structure and function. Journal of Soil and Water Conservation 72(4):361-373. <https://doi.org/10.2489/jswc.72.4.361>.

Best Research Paper for Impact and Quality Honorable Mention

Teague, W.R., S. Apfelbaum, R. Lal, U.P. Kreuter, J. Rowntree, C.A. Davies, R. Conser, M. Rasmussen, J. Hatfield, T. Wang, F. Wang, and P. Byck. 2016. The role of ruminants in reducing agriculture's carbon footprint in North America. Journal of Soil and Water Conservation 71(2):156-164. <https://doi.org/10.2489/jswc.71.2.156>.

Editor's Choice Award

In recognition of an article of excellence appearing in the "A" Section of the Journal of Soil and Water Conservation in the previous year, as well as an honorable mention.

Editor's Choice Award

Sanderson, J.S., C. Beutler, J.R. Brown, I. Burke, T. Chapman, R.T. Conant, J.D. Derner, M. Easter, S.D. Fuhlendorf, G. Grissom, J.E. Herrick, D. Liptzin, J.A. Morgan, R. Murph, C. Pague, I. Rangwala, D. Ray, R. Rondeau, T. Schulz, and T. Sullivan. 2020. Cattle, conservation, and carbon in the western Great Plains. *Journal of Soil and Water Conservation* 75(1):5A-12A. <https://doi.org/10.2489/jswc.75.1.5A>.

Editor's Choice Honorable Mention

Lal, R. 2020. Soil organic matter content and crop yield. *Journal of Soil and Water Conservation* 75(2):27A-32A. <https://doi.org/10.2489/jswc.75.2.27A>.

Editor's Choice Honorable Mention

Moriasi, D.N., L.F. Duriancik, E.J. Sadler, T. Tsegaye, J.L. Steiner, M.A. Locke, T.C. Strickland, and D.L. Osmond. 2020. Quantifying the impacts of the Conservation Effects Assessment Project watershed assessments: The first fifteen years. *Journal of Soil and Water Conservation* 75(3):57A-74A. <https://doi.org/10.2489/jswc.75.3.57A>.

Associate Editor Excellence Award

In recognition of associate editors for their contributions to the success and development of the Journal of Soil and Water Conservation.



Clark Gantzer

Clark Gantzer has served as an associate editor for eight years, following his term on the SWCS Board of Directors. As an editor, he continues to show exceptional dedication to the mission of the Society and to advancing the science and art of natural resource conservation. In addition to managing the review of assignments, Gantzer has assisted other associate editors by providing feedback on several of their manuscripts. He also volunteered to serve as an editor of the 2020 SWCS 75th Anniversary essay collection, *Soil and Water Conservation: A Celebration of 75 Years*. We are pleased to recognize his continued service to the Society with the Associate Editor Excellence Award.



J. Arbuckle

J. Arbuckle has served as an associate editor since 2012. In his nine years as editor, he has consistently provided authors with prompt, high-quality reviews. Arbuckle has also volunteered to serve on journal committees and offered his expertise to an effort to review and update journal policies related to social science submissions. His work to improve the journal's impact and relevance is recognized with the 2021 Associate Editor Excellence Award.



Jane Johnson

Jane Johnson joined the *Journal of Soil and Water Conservation* Editorial Board in 2012. During her tenure as an associate editor, she has handled dozens of manuscripts in the areas of soil quality and conservation management, recruiting solid reviews and providing authors valuable feedback. Johnson regularly exceeds journal goal manuscript turnaround times so that authors receive timely decisions. She is well-deserving of the Associate Editor Excellence Award.

CHAPTER AWARDS

Chapter Achievement Award

In recognition of chapters for significant achievements through a single activity conducted during the year.

California/Nevada Chapter
Michigan Chapter
North Dakota Chapter
South Dakota Chapter
Wisconsin Chapter

Outstanding Chapter Award

In recognition for the chapter's success in carrying out its overall program during the past year.

California/Nevada Chapter
Iowa Chapter
Michigan Chapter
National Capital Chapter
Nebraska Chapter
South Dakota Chapter
Southern New England Chapter
Wisconsin Chapter

SCHOLARSHIPS

Melville H. Cohee Student Leader Conservation Scholarship

Provides financial assistance to members of SWCS who are in their junior or senior year of full-time undergraduate study or are pursuing graduate level studies with a natural resources conservation orientation at a properly accredited college or university.



Christopher Burch

Chris Burch is the 2021 Melville H. Cohee Student Leader Conservation Scholarship award recipient. Burch is a student member of the SWCS and is currently pursuing a

master's degree in environmental biology at Hood College located in Frederick, Maryland. He is also currently employed by the Maryland Department of Agriculture. Burch is widely recognized among the Hagerstown Community College (HCC) faculty and has been an adjunct instructor at HCC. He is known to have an exemplary work ethic, high standards

of excellence, thirst for knowledge, and passionate dedication to the environment, in particular soil and water conservation. He has received many awards and recognition of service to multiple organizations such as the FFA, Boy Scouts of America, and Envirothon, to mention a few. Burch is well deserving of this scholarship to help him reach his goals with his education.

Kenneth E. Grant Research Scholarship

Provides financial aid to members of SWCS for interdisciplinary graduate-level research on a conservation topic that will extend the SWCS mission of fostering the science and the art of soil, water, and related natural resource management research.



Lijing Gao

Lijing Gao is the 2021 Kenneth E. Grant Research Scholarship award recipient. Gao is a student member of the Iowa Chapter of SWCS and is currently pursuing a PhD degree in sustainable agriculture and rural sociology with a minor in statistics at

Iowa State University in Ames, Iowa. Her research takes an interdisciplinary approach and collaborates with statisticians, soil scientists, agronomists, economists, and other experts to help identify and better understand farmers' job satisfaction and the deciding conservation-related factors. Gao's research interests surround issues in rural life, farmer behaviors, and pro-environmental practices adoption. The current research project examines soil and water conservation-related characteristics and climate change undertakings as predictors of farmers' job satisfaction. Gao is a native of China and holds degrees of BA and MA as well as a MS degree from Iowa State University. She has been active in student organizations at Iowa State and holds professional memberships in both Gamma Sigma Delta and Alpha Kappa Delta. Gao is well deserving of this scholarship to help her reach her goals with this important research.

WIN AWARDS

Win Conservationist of the Year Award

In recognition of an outstanding woman farmer/producer/conservationist and demonstrates a

vital role in supporting women in agriculture and conservation.



Jean Eells

Jean Eells of north-central Iowa has been a tireless advocate and educator

for conservation outreach, especially for women landowners. She operates a consulting company, E Resources Group, LLC, working with companies, organizations, and municipalities on education and environmental initiatives. Jean is a farmland owner and manages the land with her siblings, collaborating on conservation decisions with her family and their tenants.

Eells has collaborated with the Women, Food and Agriculture Network for over 12 years, a role that has been crucial in advancing conservation outreach and implementation to women, empowering them to use their voices and their power in seeing the changes they want on their land. She has been a Soil and Water District Commissioner for over 20 years and served on numerous committees related to soil health, pollinators, and more. She is an instructor for NRCS on how to do effective conservation outreach to women and has trained hundreds of NRCS and partner employees.

All of the above is just the tip of the iceberg regarding her work and impact. Eells pushes the needle on conservation and outreach, from her farm to statewide and national scales, and our land is all the better for it.

Congratulations, Jean!

WiN Individual Award of Excellence Recipient

In recognition of an individual who, over a period of time, has contributed substantially and creatively to our Natural Resources Conservation profession. The recipient should exemplify excellence in a particular discipline and, possibly, multi-discipline efforts that promote excellence and creativity. The recipient should also demonstrate involvement in WiN.

Julie MacSwain

Julie MacSwain's energy and passion encourages others to be part of WiN and to become a life member of the organization. As the West Regional

Representative of WiN, she keeps the passion and dedication alive.



She is a part of the West Region WiN Lunch & Learn Friday session—this constant series of networking and learning opportunities is unique to WiN. In addition, MacSwain also calls and checks in with the members. She is always seeking out the

development of women in the agency and encouraging them to pursue official positions in the organization for personal and professional development. Other times, she will just check in and see how the members are doing and ask what she can do to improve, assist, or enhance the member's work deliverables, work environment, or even workplace dynamics.

As an Assistant State Conservationist for Partnerships, she is also very involved in the larger audience. She brings in the newest employees and is willing to help anyone. She has announced her retirement, and her NRCS void will be felt and hard to fill. It's not just filling a position, it's about the person in that position. MacSwain is the ultimate USDA employee because she is a People's Person and that is a WiN-win situation.

Congratulations and thank YOU, Julie!

WiN Group Award of Excellence Recipient

In recognition of a group who, over a period of time, have contributed substantially and creatively to our Natural Resources Conservation profession. The group should exemplify excellence in a particular discipline and, possibly, multi-discipline efforts that promote excellence and creativity.



Powerhouse of Women - the FAB 5

Since the beginning of the Soil Conservation Service (SCS), women have played an important role in

conservation. In the earliest era of the conservation movement women rarely held field positions. It was these early women that paved the way for all future female conservationists. In what is known today as the Natural Resources Conservation Service (NRCS) there is an increasing number of women

serving as conservationists, technicians, and other positions. Indiana NRCS is divided into four areas: the northwest (NW), the northeast (NE), the southeast (SE), and the southwest (SW). The SW area of Indiana contains 17 service centers. Of these service centers, 7 have district conservationist (DCs) positions held by women. This means that 41% of the southwest area DCs are women. This high percentage of female representation is a newer phenomenon. Comparatively, as of 2020, 38% of NRCS employees nationwide were female. These women DCs in SW Indiana manage 37% of all active contracts, or over 30% of the total dollar obligation of SW area contracts which comes out to approximately 30 million dollars.

Translating these funds into conservation on the ground comes from the cooperation of both NRCS and partner staff within the Indiana Conservation Partnership (ICP). In the southwest, five county Soil and Water Conservation Districts (SWCDs) have come together to form the "Fab-5," as they are locally called. Four of the seven SW Area female DCs in this "Fab 5" area are Rita Becker Forler (Vanderburgh), Jessica Harig (Posey), Stephanie Mitchell (Gibson), and Morgan Devine (Pike).

Experience in the agency for these women ranges from only 4 years to over 25 years. Rita Becker Forler has been a DC for 20 years, getting her start in the agency in 1987 as a soil conservationist hired under the Food Security Act of 1985. She has been a DC in southwest Indiana for 20 years, including in Gibson, Spencer/Perry Counties. She has been the DC for Vanderburgh County since 2017. Jessica Harig has worked for NRCS for 18 years in both Illinois and Indiana, serving in various roles from a soil conservation technician intern, soil conservationist, to a DC. She has been a DC for Posey County, Indiana since 2014. Stephanie Mitchell got her start 9 years ago with NRCS Kentucky as a soil conservation technician. She then moved on to NRCS Indiana to work as an engineering technician, soil conservationist, and now a DC. She has been a DC for Gibson County since May 2020. Morgan Devine has been with the agency since 2016, hired on as an engineering technician for the SW area. She has been the DC for Pike County since November 2020 and is also a WiN member.

These four women demonstrate that the power is in the partnership. Congratulations!



JOIN TODAY:
winnrcs.org/join-win



Women in NRCS (WiN)

WiN's Mission

To provide women with training, opportunities, and mentoring to develop into their fullest professional potential.

WiN's Vision

High performing, diverse, innovative and motivated female employees who transform the workplace.



Congratulations to:

Jean Eells
*WiN Conservationist of the Year
2021 Award Recipient*

Julie MacSwain
*WiN Individual Award of Excellence
2021 Award Recipient*

The Fab 5 of Indiana
*WiN Group Award of Excellence
2021 Award Recipient*

2021 WiN Executive Board

Heather Medina Saucedo, President
Kristie McKinley, Past President
Val Hartman, Exec. Vice President
Jeanne Hamilton, Vice President
Anne Pollok, Treasurer of Finance
Heather Hinson, Treasurer of Membership
April Wilson, Secretary

SWCS CONFERENCE SITES AND CHAIRS

1946	Chicago, IL, Ralph H. Musser	1984	Oklahoma City, OK, Floyd E. Heft
1947	Omaha, NE, Ralph H. Musser	1985	St. Louis, MO, Roland R. Willis
1948	Cincinnati, OH, T.S. Buie	1986	Winston-Salem, NC, Joe D. Nichols
1949	St. Louis, MO, Lloyd E. Partain	1987	Billings, MT, Maurice G. Cook
1950	Detroit, MI, Firman E. Bear	1988	Columbus, OH, Donald Van Meter
1951	Memphis, TN, Morris E. Fonda	1989	Edmonton, AB, David R. Cressman
1952	Buffalo, NY, Morris E. Fonda	1990	Salt Lake City, UT, Richard Duesterhaus
1953	Colorado Springs, CO, H.H. Bennett	1991	Lexington, KY, Richard Duesterhaus
1954	Jacksonville, FL, R.Y. Bailey	1992	Baltimore, MD, Ronald J. Hicks
1955	Green Lake, WI, Austin L. Patrick	1993	Fort Worth, TX, Ronald J. Hicks
1956	Tulsa, OK, Edward H. Graham	1994	Norfolk, VA, Calvin J. Perkins
1957	Pacific Grove, CA, J.S. Russell	1995	Des Moines, IA, Gary Steinhardt
1958	Asheville, NC, Russell G. Hill	1996	Keystone Resort, CO, John A. Knapp
1959	Rapid City, SD, Alvin C. Watson	1997	Toronto, ON, Aniko Szojka-Parnell
1960	Guelph, ON, Elmer L. Sauer	1998	San Diego, CA, Aniko Szojka-Parnell
1961	Lafayette, IN, Walter C. Gumbel	1999	Biloxi, MS, Dennis Pate
1962	Washington, DC, Roy D. Hockensmith	2000	St. Louis, MO, Dennis Pate
1963	Logan, UT, George M. Browning	2001	Myrtle Beach, SC, Dana Chapman
1964	Jackson, MS, Herbert A. Hopper	2002	Indianapolis, IN, Bob Eddleman
1965	Philadelphia, PA, Minott Silliman, Jr.	2003	Spokane, WA, Myron Senechal
1966	Albuquerque, NM, John R. J. Bradshaw	2004	St. Paul, MN, Deborah Cavanaugh-Grant
1967	Des Moines, IA, Cecil W. Chapman	2005	Rochester, NY, Jean Steiner
1968	Athens, GA, Frank H. Mendell	2006	Keystone, CO, Jean Steiner
1969	Fort Collins, CO, Ray Hunter	2007	Tampa, FL, Theo Dillaha
1970	Toronto, ON, Robert W. Eikleberry	2008	Tucson, AZ, Peggie James
1971	Columbus, OH, Einer L. Roget	2009	Dearborn, MI, Peggie James
1972	Portland, OR, J.R. Johnston	2010	St. Louis, MO, Gary Steinhardt
1973	Hot Springs, AR, A.B. Linford	2011	Washington, DC, Bill Boyer
1974	Syracuse, NY, William L. Vaught	2012	Fort Worth, TX, Bill Boyer
1975	San Antonio, TX, Frank W. Schaller	2013	Reno, NV, Dan Towery
1976	Minneapolis, MN, Chester E. Evans	2014	Chicago, IL, Dan Towery
1977	Richmond, VA, J. Vernon Martin	2015	Greensboro, NC, Mark Berkland
1978	Denver, CO, Arthur D. Latornell	2016	Louisville, KY, Mark Berkland
1979	Ottawa, ON, William Moldenhauer	2017	Madison, WI, Jon Scholl
1980	Dearborn, MI, Gerald R. Calhoun	2018	Albuquerque, NM, Rex Martin
1981	Spokane, WA, Jesse L. Hicks	2019	Pittsburgh, PA, Rex Martin
1982	New Orleans, LA, Robert C. Baum	2020	Virtual Event, Rex Martin
1983	Hartford, CT, Chris J. Johannsen	2021	Virtual Event, Dale Threatt-Taylor