11th Eastern Native Grass SYMPOSIUM

SEPTEMBER 17-19 2018

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Form & Function: Grasslands and Meadows in the Converging Landscape

Erie, PA
September 17-19, 2018
Bayfront Convention Center

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Welcome to the 11th Eastern Native Grass Symposium!

It seems like just yesterday we embarked on the planning of this, the 11th convening of the storied Eastern Native Grass Symposium. With the guidance of the national steering committee, we identified our goals for growth and the continued evolution of the Symposium. We developed our objectives, and we got to work. What seemed like a world of time in front of us back in early 2017 has flown by. Now, we find ourselves here, together, ready to be educated and inspired in our careers and in the activities that fuel our passion.

We are extremely proud of the slate of speakers, poster presenters, field tour facilitators and entertainment we have assembled for you. We think you'll agree as you peruse the following pages in preparation for what promises to be an outstanding few days of professional enrichment.
Please be sure to visit our exhibitors and sponsors! They are here to meet you, to develop business and strategic relationships, and to share information on their services and missions. And their financial support is key to the Symposium's success.

We'd like to thank the steering committee for its support and guidance, and for allowing us the flexibility to develop this program for you. We've had great additional support from the VisitErie staff, including those in charge of the lovely hotel accommodations we will enjoy at the Courtyard by Marriott Erie Bayfront and the Sheraton Inn Erie Bayfront. The Bayfront Convention Center staff have gone above and beyond in providing an outstanding venue for our event.

We hope you enjoy the next three days, and hopefully find time to enjoy some of the natural, historical and cultural treasures we're so proud of here in northwestern Pennsylvania.

Sincerely,
The ENGS Local Planning Committee

Exhibitors and Floor Plan

The following companies, organizations and agencies are here to visit with you, while showing their support for the 11th Eastern Native Grass Symposium. Please take the time to visit each of them and learn about their products and services.

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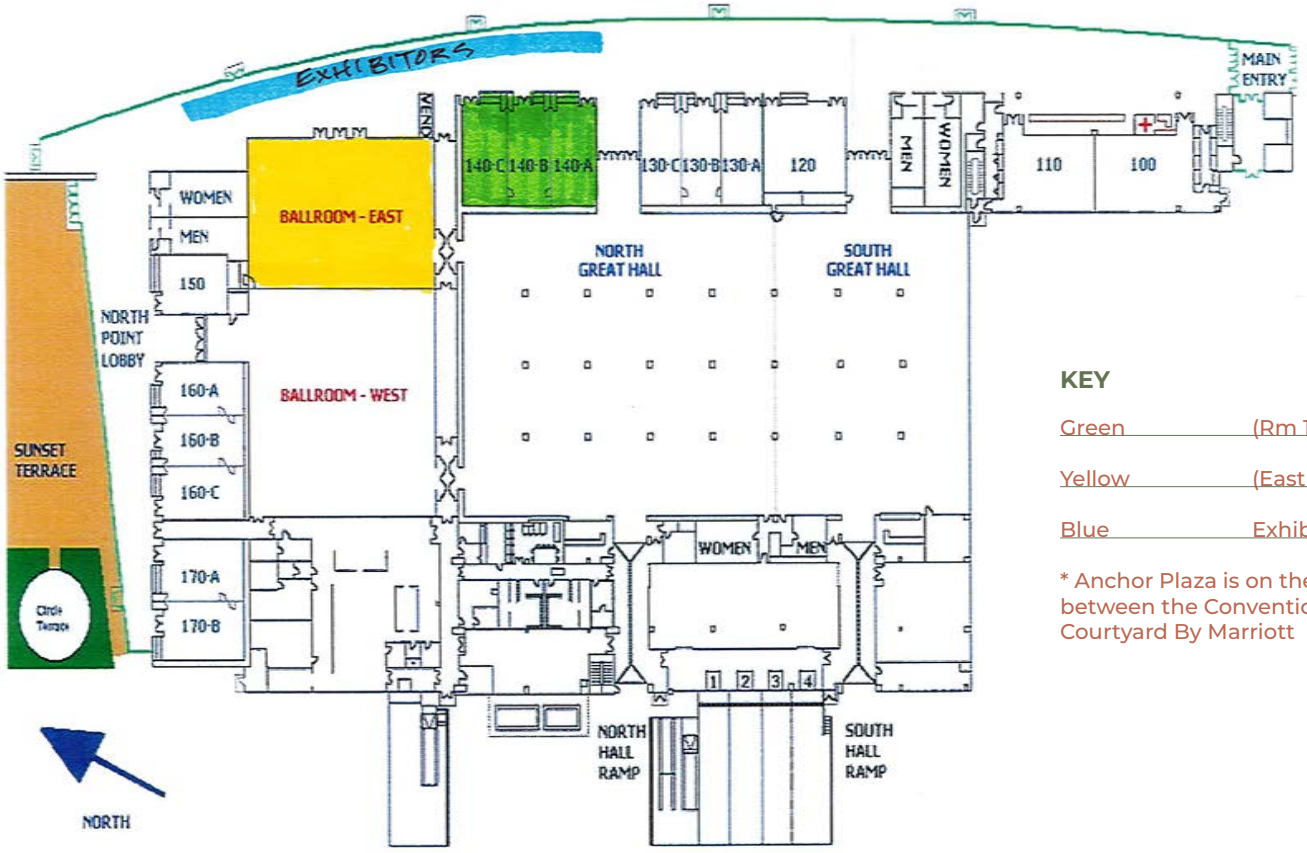

KEY

Green	(Rm 140 A,B & C)
Yellow	(East Ballroom)
Blue	Exhibitors

* Anchor Plaza is on the 2nd floor between the Convention Center & Courtyard By Marriott

Continuing Education

The 11th Eastern Native Grass Symposium represents a unique continuing educational opportunity for those who wish to further their knowledge base and validate their learning experience through continuing education credits/units (CECs/CEUs).

The following professional organizations have reviewed our agenda, speakers and topics, and have offered credits to their members as identified below.

American Society of Landscape Architects (ASLA): Through its Landscape Architecture Continuing Education System™ (LA CES), 17 credits have been approved. Each approved course will be noted with the LACES logo and number of CECs available. Landscape architects attending CEC-bearing sessions will need to complete an attendance verification form at the end of each CEC-bearing session. Attendees will be given a certificate of completion so their CECs can be applied to their recertification requirements.

USDA-NRCS Pennsylvania: A total of six (6) Wildlife Biology and two (2) Pasture Conservation Planner Continuing Education Credits (CECs) may be earned by USDA-NRCS Pennsylvania representatives in attendance.

Certified Crop Advisers (CCA): may earn 11 continuing education credits for their of attendance.

The Wildlife Society: Certified Wildlife Biologists (CWB®) may earn 15.5 Continuing Education Units (CEUs) in Category I of the Certified Wildlife Biologist® Renewal/Professional Development Certificate Program for participation in the 11th Eastern Native Grass Symposium.

Pennsylvania Certified Horticulturists (PCH): may earn three (3) CEUs for each field tour attended, 7.5 CEUs for attending Tuesday and 6.5 CEUs for attending Wednesday informational sessions. Potential total of 20 CEUs can be achieved by each attendee.

Agenda-At-A-Glance

Sunday, 9/16

4:00 – 7:00 p.m. Registration table open for Sunday arrivals

Early bird reception (light hors d'oeuvres, beverages) **(East Ballroom/North Point Lobby/Exhibit Area)**

Monday, 9/17

Registration table open all day

Exhibitor check-in and setup all day (Please be ready to go by 4:30)

7:00 – 7:45 a.m. Breakfast **(East Ballroom)**

Welcome remarks during breakfast

7:45 a.m. Board busses for field tours

8:00 – 11:30 a.m. Morning field tours

Noon Busses to BCC for passenger switch to afternoon destinations

12:30 – 3:30 p.m. Afternoon field tours

Boxed lunches & drinks on bus while in-transit

4:30 p.m. Busses arrive back at BCC

5:30 – 7:00 p.m. Evening reception, meet & greet with exhibitors in **North Point Lobby** (heavy hors d'oeuvres and beverages)

Entertainment: Dave Boughton, "Shipwrecks of Lake Erie" (Details on page 45)

Tuesday, 9/18

7:00 – 7:45 a.m. Breakfast **(East Ballroom)**

7:45 – 8:45 a.m. Opening plenary session: "Native Meadows: Let's Get Real," Larry Weaner, Founder & Principal, Larry Weaner Landscape Associates

8:50 – 11:30 a.m. Concurrent sessions

Exhibitor/bathroom/beverage breaks between sessions

11:30 – noon Visit with exhibitors

Noon – 1:00 p.m. Lunch served **(East Ballroom)**

1:00 – 5:15 p.m. Concurrent sessions

Exhibitor/bathroom/beverage breaks between sessions

5:15 – 6:30 p.m. Free time, visit with exhibitors

6:30 – 9:00 p.m. Dinner on the **Anchor Plaza** w/ entertainment by *Salmon Frank* (Details on page 45)

Poster presentation indoors in foyer of Anchor Plaza

Wednesday, 9/19

7:00 – 7:45 a.m. Breakfast **(East Ballroom)**

7:45 – 8:45 a.m. Opening plenary session: "Restoring Woodlands and Savannahs in the Eastern US: Lessons Learned from a Decade of Research," Patrick D. Keyser, Ph.D., CWB, Professor and Director, Center for Native Grasslands Management, University of Tennessee

8:50 – 11:30 a.m. Concurrent sessions

Exhibitor/bathroom/beverage breaks between sessions

11:30 – noon Visit with exhibitors

Noon – 1:00 p.m. Lunch served **(East Ballroom)**

1:00 – 3:10 p.m. Concurrent sessions

Exhibitor/bathroom/beverage breaks between sessions

3:20 – 4:20 p.m. Closing plenary session: "Converting a Former Superfund Site to Native Grasslands and Meadows," Calvin Ernst, Founder & President, Ernst Conservation Seeds

4:30 p.m. Symposium concludes

Field Tours

Attendees chose two (2) of the four (4) field tours below when registering for the Symposium. These tours take place on Monday, September 17 (see Agenda At-A-Glance). One tour will take place in the morning. Lunch will follow on the motor coach on the way to the afternoon tours. The second tour will take place in the afternoon before all groups reconvene at the Bayfront Convention Center in the late afternoon. Your registration materials included the information for your selected tour assignments.

Getting Seeds from Field to Freight: A Tour of Ernst Conservation Seeds

Meadville, PA

Facilitator: Ernst Seeds staff

Ernst Conservation Seeds staff will lead the group on tours of the company's production fields, seed cleaning, processing, warehouse and shipping operations. September is a busy time of year at Ernst Seeds, as harvest is at its peak and the fields are alive with the color of asters, goldenrods and native grasses.

LA CES: 2 CEU (satisfies HSW standard)

Wine Country Connection: Streambank Vegetation Projects and Vineyards Using Natives as Cover Crops, Erosion & Sedimentation Solutions

Erie and North East, PA

Facilitators: Tom McClure, District Manager, Erie County Conservation Dist. and Dan Dahlkemper, Principal, Dahlkemper Landscape Architects & Contractors

The first stop on this tour will be a creek bank restoration demonstration project along Cascade Creek where attendees will learn about lake geology and factors addressed in the restoration of the streambank. A stop at Camp Glinodo will illustrate a streambank stabilization project along Seven-Mile Creek. We will then visit Trolley Line Vineyards in North East to see innovative land preservation practices using native grasses as cover crops and erosion/sedimentation solutions. The tour will be capped off by a social visit to a nearby winery.

LA CES: 3 CEU (satisfies HSW standard)

Native Grasses, Wetland Plants and the Sand Barrens of Presque Isle

Presque Isle State Park

Erie, PA

Facilitator: Dr. James Bissell, Curator of Botany and Director of Natural Areas, Cleveland Museum of Natural History

Dr. Bissell is one of Ohio's premier botanists. He is responsible for much of what is currently known about plant diversity and distribution in northeast Ohio and northwest Pennsylvania. His work has helped preserve land with rare species and habitats throughout the region. His tour will feature a one-two punch beginning at the Lighthouse or Beach #10 with a study of Presque Isle Indiangrass. Dr. Bissell describes it as a very atypical variant, compared to all native Indiangrass populations he has seen in Ohio and northwestern PA. A stop at the Thompson Circle pull-off will study the Sand Barrens and restored marshes of greater bur-reed (Sparganium eurycarpum), tussock sedge (Carex stricta) and leafy tussock sedge (Carex aquatilus), a state-endangered sedge in Pennsylvania. The Sand Barrens on Long Ridge, west of Thompson Circle, are the best sand barrens within Presque Isle. Restored Lake Erie marshes, dominated by greater bur-reed and tussock sedges, within Niagara Pond, will be seen just south of Fossil Dune Ridge, west of Thompson Circle.

Establishment of Native Grasses & Forbs on State Game Lands

SGL 218 (Siegel Marsh)

Facilitators: Ronda Bimber, Acting Land Manager and John Keller, Game Lands Maintenance Supervisor

Members of the Pennsylvania Game Commission land management and habitat teams will lead a tour(s) of various warm season grass stands that have been developed for wildlife habitat and conservation purposes. Visitors will see some monoculture issues experienced on the site, CREP plantings that have worked well, and will see the results of a new seeding done in the spring which should demonstrate expected progress from spring to fall.

Posters

Our poster presentation will take place on Tuesday evening, September 18, in the foyer of the Anchor Plaza during dinner and entertainment. Please take the time to visit our poster presenters and learn from their research and findings.

Evaluation of Various Native Warm-season Grass Varieties at Beltsville MD 2015 – 2017

Shawn Belt, Horticulturist USDA, NRCS
Norman A. Berg National Plant Materials Center
8791 Beaver Dam Rd.
Beltsville, MD 20705
301-289-9780
Shawn.Belt@md.usda.gov

Mid-Atlantic Native Grasses Tolerant of Poultry Farm Emissions

Shawn Belt, Horticulturist
USDA, NRCS
Norman A. Berg National Plant Materials Center
8791 Beaver Dam Rd.
Beltsville, MD 20705
301-289-9780
Shawn.Belt@md.usda.gov

Collection, Evaluation and Selection of a Central Region Little Bluestem (Schizachyrium scoparium)

Ronald L. Cordsiemon, II, PMC Manager
Mollie Herget, PMC Agronomist
USDA-NRCS
Elsberry Plant Materials Center
2803 N. Hwy. 79
Elsberry, MO 63343
573-898-2012
ron.cordsiemon@mo.usda.gov
mary.herget@mo.usda.gov

Early Successional Vegetation Communities on Restored Longleaf Pine in Southeast Virginia

Robert Glennon, Private Lands Biologist
Conservation Management Institute, Virginia Tech
203 Wimbledon Lane
Smithfield, VA 23430
252-312-2654
Robert.Glennon@va.usda.gov

Pollinator Habitat Seeding in Sussex County, Virginia

Robert Glennon, Private Lands Biologist
Conservation Management Institute, Virginia Tech
203 Wimbledon Lane
Smithfield, VA 23430
252-312-2654
Robert.Glennon@va.usda.gov

Posters

Upland Bird Habitat Buffer in Sussex County, Virginia

Robert Glennon, Private Lands Biologist
Conservation Management Institute, Virginia Tech
203 Wimbledon Lane
Smithfield, VA 23430
252-312-2654
Robert.Glennon@va.usda.gov

NatiVeg – A Planning Tool, Applications and Limitations

Jef Hodges, CWB, Grassland Coordinator
National Bobwhite Conservation Initiative
382 W Hwy 18
Clinton, MO 64735
660-351-2766
jhodge34@utk.edu

Revegetation Success of Native Species Following Chemical Treatment of Invasive Common Reed (Phragmites australis)

Scott Snell, Natural Resources Specialist
USDA – NRCS, Cape May Plant Materials Center
1536 Route 9 North,
Cape May Court House, NJ 08210
609-741-5329
Scott.snell@nj.usda.gov

Southeastern Wildrye Response to Seasonal Burning

Lori McClain, Graduate Research Assistant, Department of Plant and Soil Sciences
Brian S. Baldwin, Professor, Plant Science & Genetics
Dept. of Plant and Soil Sciences
Mississippi State University
Mississippi State, MS 39762
662-414-6267 (Lori)
662-324-7337 (Brian)
lm1358@msstate.edu
BBaldwin@pss.msstate.edu

Developing Coastal Grassland Technologies for Ecosystem Restoration in a Changing Climate and Landscape

Michael Yacovelli, USDA-NRCS Cape May Plant Materials Center
1536 Route 9 North
Cape May Court House, NJ 08210
609-465-5901
Michael.Yacovelli@NJ.USDA.Gov

	Tuesday, September 18	
Time	**East Ballroom**	
7:00 - 7:45	**Breakfast**	
7:45 - 8:45	**Plenary Session:** **Larry Weaner** - Native Meadows: Let's Get Real **(1.0 CEU LACES)**	
	East Ballroom	**Room 140**
8:50 - 9:50	**Tom Brightman** - The Meadow Garden at Longwood: History, Design, Ecology and Interpretation **(1 CEU LACES)**	**Sjoerd Duiker** - Grazing Native Warm Season Perennials to Meet Production and Conservation Goals **(1 CEU CCA - SWM)**
9:55 - 10:55	**Jim Blazek**: Vegetated Bank and Shoreline Stabilization Utilizing Native Plants **(1 CEU LACES)**	**Pat Keyser**: An Overview of Applied Research on Native Warm-season Grass Forages: Where Do We Stand, Where Are We Headed? **(1 CEU CCA - CM)**
11 - 11:30	**Daina Beckstrand** - Introduction to Pollinators and Native Habitat Establishment	**Paul Patterson**: Switchgrass and Miscanthus as Renewable Bedding and Fuel Options for Poultry Operations **(.5 CEU CCA - SWM)**
11:30 - 12:00	**Vendor Break**	
12:00 - 1:00	**Lunch**	
1:00 - 2:00	**Harland Patch** - Feeding Your Pollinators **(1.0 CEU LACES)**	**Steph Herbstritt**: Perennial Grasses in Multifunctional Buffers to Benefit Water Quality and Farm Profitability **(.5 CEU CCA - SWM, .5 CEO CCA - SUST)**
2:05 - 3:05	**Amy Johnson**: Understanding Impacts of Conservation and Land Management on Grassland Biodiversity – Lessons Learned through Community-Based Conservation **(1.0 CEU LACES) (.5 CEU CCA - CM, .5 CEU CCA - SUST)**	**Jim Black** - The Role of Shortleaf Pine in Native Grass Recovery
3:10 - 4:10	**Paul Brydges** - The Native Plant Palette: Sustainable Design for the Environment and Your Business **(1.0 CEU LACES)**	**Vitalis Temu** - Enhanced Establishment and Sustainable Defoliation Management of Native Warm-season Grasses **(1 CEU CCA - CM)**
4:15 - 5:15	**Jenna Webster**: The Croton Grassland: A Tale of Weeds, Wildlife, Waste & Renewal **(1.0 CEU LACES)**	**Joel Hunter**: Interpretation of Soil Tests for Warm Season Grasses and Associated Meadows **(.5 CEU CCA - NM)**

	Wednesday, September 19	
Time	**East Ballroom**	
7:00 - 7:45	**Breakfast**	
7:45 - 8:45	**Plenary Session:** **Pat Keyser** - Restoring Woodlands and Savannahs in the Eastern US: Lessons Learned from a Decade of Research	
	East Ballroom	**Room 140**
8:50 - 9:50	**John Seymour**: Proven Methods of Establishing Native Grasslands and Meadows **(1.0 CEU LACES) (1 CEU CCE - CM)**	**DoKyoung Lee** & **Colleen Zumpf** - Multifunctional Design of IDOT Rights-of-Way: Pollinators Habitat and Biomass Production
9:55 - 10:55	**Robert Hoffman**: Natives on Steep Slopes, What the HEL: How Natives' Form & Function Allow Use for Erosion Control **(1.0 CEU LACES) (I CEU CCA - SWM)**	**Thelma Redick**: The Grassland as the Integrating Context to Teach STEM
11:00 - 11:30	**Rob Davis**: Multi-acre Solar Arrays that Benefit Pollinators, Soil, and Water	**Jef Hodges** - Integrating Native Grass Grazing Management and Northern Bobwhite Habitat **(.5 CEU CCA - SUST)**
11:30 - 12:00	**Vendor Break**	
12:00 - 1:00	**Lunch**	
1:00 - 1:30	**WarrenCohn/Greg Kramer**: Vegetated Bank and Shoreline Stabilization Using Native Plants **(1.O CEU LACES) (.5 CEU CCA - SWM, .5 CEU CCA - SUST)**	**Chris Miller** - Quantifying the Role of Native WSGs in Sequestering Soil Organic Carbon in a Coastal Plain Soil **(.5 CEU CCA - SWM)**
1:35 - 2:05		**Michael Zock**: Viability of Prairie-base Filter Sock
2:10 - 2:40	**Annabel Renwick**: Rediscovering a Lost Landscape: A Horticultural Homage to the Southeastern Piedmont Prairie **(1.0 CEU LACES)**	**J. Walter Bland**: Management of Non-native Annual Species Using Contact Herbicides **(.5 CEU CCA - IPM)**
2:45 - 3:15		**Jim Bean**: Establishment and Management of Native Grasses (Using Plateau as a Base Component) **(.5 CEU CCA - IPM)**
3:20 - 4:20	**Plenary Session:** **Calvin Ernst**: Converting a Former Superfund Site to Native Grasslands and Meadows **(1 CEU LACES)**	
4:20 - 4:30	**Concluding Remarks and Adjournment**	

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Speaker and Presentation Details

We could not be prouder of the slate of presenters we've assembled to share their knowledge and expertise with us over the coming days. Following are details about the speakers and their presentations, in order of appearance.

Tuesday, September 18
7:00 – 7:45 a.m.
Breakfast (East Ballroom)

7:45 – 8:45 a.m.
Opening Plenary Session
East Ballroom

Native Meadows: Let's Get Real
Larry Weaner, Founder and Principal
Larry Weaner Landscape Associates
Glenside, PA

Summary:
Demand for native meadows on campuses, roadsides, corporate lands and in parks and residential landscapes has increased significantly in the last few decades, due in large part to interest in wildlife-friendly, low maintenance alternatives to turf. Yet designed native meadows all too often fail due to inadequate planning and use of poorly adapted plants. Better results can be achieved when the meadow design reflects the ecological character of naturally occurring meadows. Rather than the one-year wonders of "Meadow in a Can" mixes, meadow plantings modeled on actual plant communities constitute long-term, low- maintenance landscapes and provide important habitat that is aesthetically compelling and appropriate in varied contexts. Join one of the country's premier native meadow specialists to explore native meadow design, implementation, and management in depth.

Case studies from large and small projects throughout the eastern United States will be shown, highlighting work in both public and private sectors. Establishment methods, management techniques, natural recruitment strategies, and the role of garden design principles will all be addressed. This inspiring, informative presentation will interest anyone committed to preserving and promoting America's meadow and grassland landscapes.

Bio:
Larry Weaner is a nationally recognized expert in native meadows and grasslands. He founded Larry Weaner Landscape Associates in 1982, combining expertise in horticulture, environmental science, and the traditions of garden design. His design and restoration work spans more than ten states and has been profiled in national publications, including The New York Times, The Wall Street Journal, Landscape Architecture Magazine, Garden Design, American Gardener, Landscape Architecture Magazine, and Wildflower Magazine.

His approach to creating and managing native meadows appeals to audiences nationwide. Larry has presented at many American Society of Landscape (ASLA) national and state chapter meetings, the Institute of Ecosystem Studies, the New York Botanical Garden, the Lady Bird Johnson Wildflower Center, the Millersville Native Plant Conference, the National Arboretum, the U.S. Botanic Garden, the Morris Arboretum at the University of Pennsylvania, as well as many other venues and conferences nationwide.

In 1990, Larry developed New Directions in the American Landscape (NDAL), an annual conference and workshop series that attracts professionals from across the East Coast. Larry authored Garden Revolution: How Our Landscapes Can Be a Source of Environmental Change (Timber Press) in 2016. His book received a 2017 Book Award from the American Horticultural Society.

LA CES: 1 CEU (satisfies HSW standard)

8:50 – 9:50 a.m.
East Ballroom

The Meadow Garden at Longwood: History, Design, Ecology and Interpretation

Tom Brightman, Land Stewardship Manager
Longwood Gardens
Kennett Square, PA

Summary:
This presentation will give an overview of the history (1960-present) of Longwood's 86-acre, award-winning Meadow Garden, with an in-depth look at the recent 2013-2014 meadow expansion project. Highlights include how balancing ecology, aesthetics and interpretation during a collaborative design, construction and stewardship process resulted in a landscape that evokes sense of place, celebrates a land ethic, and educates thousands of guests each year in sustainable landscape design and stewardship practices.

Features of the presentation will include discussion of:

- Site and planting design and implementation
- Project-specific ecological restoration and interventionist techniques in a native mixed native grass and herbaceous meadow landscape
- Rare native plant species stewardship
- Native plant community structure and associated wildlife benefits
- The genesis and implementation of interpretive thematic concepts and landscape features (signs, structures, educational events)
- The nexus of horticulture and ecology
- Guest way-finding and interaction with the landscape

An added benefit will be a look at research being undertaken on avian breeding adult and young-of-the year use of the Meadow Garden and adjacent habitats, with specific emphasis on how planting and stewardship techniques can influence the spatial distribution of bird species.

This presentation will address topics that are relevant and will appeal to designers, land stewards, ecologists, and their clientele. The presenters bring a combined 25 years of experience in land stewardship, horticultural design and maintenance, guest engagement, and staff and volunteer training.

Additionally, this talk will address how form and function can be viewed through both ecological and cultural lenses.

Bio:
Tom Brightman is the land stewardship manager at Longwood Gardens, overseeing the health and care of over 700 acres of natural and agricultural land, including research coordination and interpretive training and education. Tom has a B.A. in American Civilization, and a Masters of Environmental Studies, both from the University of Pennsylvania. He was previously the easement manager at the Brandywine Conservancy. Tom has worked on large scale restoration projects for Longwood, including the PA Route 52 relocation and restoration, and the award-winning Meadow Garden. He's a lecturer in the University of Pennsylvania's MES program, and an Advisory Board member of the Land Health Institute.

LA CES: 1 CEU (satisfies HSW standard)

8:50 – 9:50 a.m.
Room 140

Grazing Native Warm-season Perennials to Meet Production and Conservation Goals

Sjoerd W. Duiker, PhD, CCA, Professor of Soil Management and Applied Soil Physics
The Pennsylvania State University
University Park, PA

Summary:
This presentation will provide a review of past research on grazing of native warm-season perennials, how warm-season perennial pastures fit in the farm landscape, and what the effect of grazing is on soil health and conservation value.

Participants will get an appreciation of potential to expand the use of native warm season perennials for grazing and its effects on soil, water and wildlife conservation, and explore if CRP lands can be used for grazing while maintaining or improving conservation benefits.

Research shows that warm-season perennial grasses are very productive, and produce high quality pasture leading to excellent animal gain. They are adapted to marginal soils, are very drought resistant, and their deep root systems improve organic matter content. Research has shown that grazing may improve soil organic matter content of native perennial stands and improve wildlife habitat. Results from working farms in northwest PA will show how these native species can be integrated with other pasture species to extend the grazing season. These results are confirmed by research from different parts of the U.S.

The presentation discusses production and conservation functions of native perennial pastures and how they fit in the landscape on a working farm.

The project was a collaboration between farmers in NW Pennsylvania, USDA-NRCS, RC&D Council, Grazing Land Coalition, Ernst Conservation Seeds, and Penn State University.

Warm-season perennial grasses are very productive, produce high quality pasture leading to excellent animal gain, are adapted to marginal soils, are very drought resistant, and their deep root systems improve organic matter content. Grazing may improve conservation benefits, opening the opportunity to expand use of CRP land.

Bio:
Sjoerd is a soil management specialist at Penn State University. His work concentrates on improving soil health with no-tillage systems. Through collaboration with agronomy educators, farmer organizations, government agencies and agricultural industry, no-tillage has increased from 23% of planted acres in 2004 to more than 65% today in Pennsylvania. Sjoerd has done extensive work on different cover crop species and their management. Sjoerd has recently been involved in a study of grazing integration with crop production for soil health and productivity and is interested in warm-season perennials to extend the grazing season while improving soil health.

CCA: Soil & Water Management: 1 CEU

9:55 – 10:55 a.m.

East Ballroom

Vegetated Bank and Shoreline Stabilization Utilizing Native Plants

Jim Blazek, CPESC, Vice President
D2 Land & Water Resource, Inc.
Indianapolis, IN

Summary:
It is possible to successfully establish native plants on difficult riverbank and reservoir shoreline sites utilizing a hybrid of classic bioengineering woody species techniques with modern materials and specialized planting methods. These methods are possible in the landscape of public low bid projects with unspecialized labor crews. There is a strong economic benefit to using these techniques versus traditional hard armor bank stabilization.

Attendees will learn a few proven and repeatable strategies for practicing vegetated bank stabilization, and will learn how to assess sites for the applicability of vegetated bank and shoreline stabilization.

This presentation is comprised of a compilation of several shoreline and bank stabilization projects. The sites on which these installations have taken place are all different. However, there is a common strategy for assessing different sites that renders the successful use of vegetated stabilization repeatable with a relatively high degree of surety.

We will look at projects that date back to 2003 that have been monitored up to present time, 2018. The "workhorse" of this practice, and what makes this practice sustainable, is the native plant community that stabilizes the sites. Each project required the involvement of some combination of all or part of the following: an owner, a civil engineer, a landscape architect, a native nursery, industry manufacturers, distributors, contractors, regulatory agencies, and in some cases departments of transportation, parks departments, county surveyors, and nationwide grants.

Vegetated bank and shoreline stabilization within the riparian corridor poses many challenges. What are some methods that work? What time of year can these methods be employed? This presentation will present case studies including site analysis, budget preparation, design details, installation challenges, and 15 years of post-construction monitoring.

Bio:
Jim Blazek, CPESC, is vice president and partner of D2 Land & Water Resource, Inc. Since 1989, Jim has practiced utilizing cost effective, innovative and environmentally friendly technologies for erosion/sediment control, geotechnical engineering and storm water management. Jim earned a BA in Zoology from DePauw University.

CCA: Soil & Water Management: .5 CEU
Sustainability: .5 CEU
LA CES: 1 CEU (satisfies HSW standard)

9:55-10:55 a.m.
Room 140

An Overview of Applied Research on Native Warm-season Grass Forages: Where Do We Stand, Where Are We Headed?

Patrick D. Keyser, Ph.D., CWB, Professor and Director, Center for Native Grasslands Management
University of Tennessee
Knoxville, TN

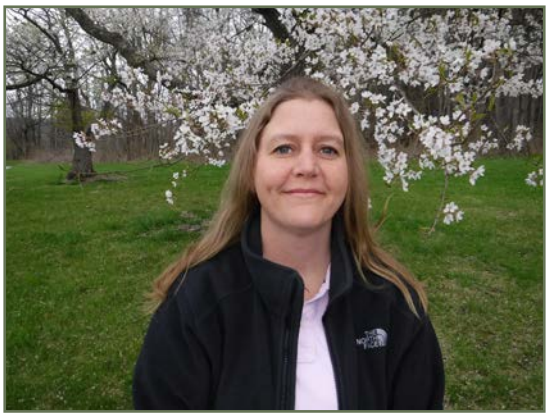
Summary:
Over the past decade, we have made substantial progress in understanding how native grasses can contribute to forage production in the eastern United States. We have documented carrying capacities, production curves, rates of gain, outcomes of various grazing strategies, the economics of these grasses, and we have compared them to traditionally used forages. A concise summary of major findings in each of these areas will be presented. However, there are important questions still being asked by producers and forage leaders that remain to be answered. Placing native grass forages into the context of existing farm operations by understanding their role at the systems level, evaluating impacts of these systems on calving and weaning outcomes, increasing our knowledge about diverse forage mixtures, and continuing to improve the reliability of establishment are all issues that must be addressed. Each of these areas represent potential barriers to adoption of native forages by eastern cattlemen. These areas will be explored and insights into addressing them will be provided. Finally, perspectives on the future role of native grass forages in eastern livestock production systems will be provided.

Bio:
Dr. Keyser is a professor and director for the Center for Native Grasslands Management. In that role, Dr. Keyser provides regional and national leadership in the development and implementation of comprehensive research and outreach programs focused on a broad range of issues pertinent to the management of native grasslands. This includes work on use of native grasses in forage production systems for livestock, biofuels production, the integration of forage and biofuels, answering specific management questions for native grasses, restoration of natural grassland communities such as woodlands and savannahs, and wildlife responses to native grasslands management.

CCA: Crop Management: 1 CEU

11:00-11:30 a.m.
East Ballroom

Introduction to Pollinators and Native Habitat Establishment
Daina Beckstrand, Chesapeake Bay Technician
Centre County Conservation District (PA)
Bellefonte, PA



Summary:
This presentation is targeted for the general public, students, or professionals who are looking for a "beginner's course" about pollinators and other beneficial insects, and establishing native plants. I will teach the audience why these insects are so important and how to keep them in our neighborhoods by providing basic habitat requirements. I offer this presentation to be understood by the general public, who may not have a comprehensive background in conservation related subjects. While working for federal and county government, I have been teaching the general public how to create ollinator habitat for over 15 years. I have worked with several governmental agencies, non-profit groups and private sector parties in helping private landowners design, establish, and evaluate habitat. I also help landowners seek funding programs that offer financial assistance. Through my own professional experience, as well as research and experience from others, I will teach the audience lessons learned in native plant establishment. Planting native grasses and wildflowers requires knowledge of your existing soils/site conditions, seed-to-soil contact, weed control prior to seeding (most important!), weed control during establishment, and patience! Most importantly, it is okay to start small! A little patch of habitat can add up to a Very Big Picture!

Participants gain interest, enthusiasm, and the basic skills needed to establish native habitat at home, however big or small.

Bio:
Daina Beckstrand grew up in western New York in a blessed family of 11 children. She graduated Summa Cum Laude from SUNY Brockport with a Bachelor of Science degree in environmental biology. Daina worked as a contract wildlife biologist for the USDA Natural Resources Conservation Service in New York for one year, and in central Pennsylvania for four years. For the past ten years, she has worked for the Centre County (PA) Conservation District as the Chesapeake Bay technician. Daina has many years of experience working with landowners in creating wildlife and pollinator habitat, farm conservation planning, nutrient management and environmental education. Daina's enthusiasm while teaching about pollinators and creating basic native habitat encourages others to start on their own. She makes the topic easy to understand and conveys that it is okay to start small! In her spare time, Daina enjoys hiking, camping, and kayaking with her family.

11:00-11:30 a.m.
Room 140

Switchgrass and Miscanthus as Renewable Bedding and Fuel Options for Poultry Operations

Paul H. Patterson, Professor of Poultry Science
The Pennsylvania State University
Department of Animal Science
University Park, PA

Summary:
Price, quality and availability of softwood shavings have prompted exploration of alternative, renewable bedding resources on which to rear broiler-type chickens in the northeastern United States. Although there are many alternatives used to bed birds across the United States, these are limited by region. An option for sustainable, locally produced bedding comes from the use of biomass grasses. However, processing techniques of the grasses are numerous and have the potential to influence the physical properties, which may influence their success as bedding materials.

It is paramount that alternatives materials perform as well as the current industry standard of kiln-dried softwood shavings. Because the profit margin per bird is small and bedding is an important contributing factor to the environment of a chicken house, there is no room for reduced performance due to the bedding. This bedding environment is defined by moisture index, litter score, temperature, ambient ammonia, and ammonia flux. Furthermore, the welfare of the birds must be maintained to allow for proper growth. Maintaining welfare standards allows growers to continue to be good stewards to their birds. Footpad and breast cleanliness scores can be reflective of the house environment and can directly impact the welfare of birds. Another consideration with bedding material is the litter's end use. It can be used as either a fertilizer or fuel with thorough consideration of the nutrient profile and energy density of the end product.

Paul will summarize the thesis research of Amy Barkley and a survey of the Pennsylvania broiler industry exploring the market potential of renewable biomass grasses for poultry bedding.

Bio:
Dr. Patterson is a professor in Poultry Science, a state extension specialist and a faculty member since 1992. He is a member of the Animal Sciences Graduate Program and the former Intercollege Program in Nutrition. He conducts research on egg food safety, poultry management and nutrition with an emphasis on managing wastes for sustainable air and water quality. He also lectures for six courses in Animal Sciences. He has served on the University Faculty Senate, Advisory Committee to the Dean and chaired his departmental Promotion and Tenure Review Committee. Paul and his wife Nuket reside in State College, PA and have two sons, Kevin and Cameron who both attend Penn State University.

CCA: Crop Management: .5 CEU

11:30 a.m.-12:00 p.m.
Vendor Break

12:00-1:00 p.m.
Lunch
East Ballroom

1:00-2:00 p.m.
East Ballroom

Feeding Your Pollinators

Harland Patch, Ph.D., Research Scientist and Lecturer
The Pennsylvania State University
College of Agricultural Sciences
University Park, PA

Summary:
In recent decades, populations of bees and other pollinators have been adversely affected by many interacting stressors. The most important factor is a loss of habitat. This presentation will provide a framework for habitat design that supports and enhances pollinator communities. Attendees will learn why meadows need floral resources with varying anatomy; why meadows should have continuity of bloom over the longest period of the growing season possible; and why meadows need a high level of species diversity.

Bio:
Dr. Patch is a research scientist and lecturer in the Department of Entomology at Penn State University. Dr. Patch has a longstanding interest in the biology of pollinators. His Master's research focused on the host plant choice of black swallowtail butterflies. Plants contain protective metabolic chemicals that are toxic to a broad range of species. In most cases females must choose families of plants that that are nutritious and not toxic to their relatively immobile offspring. Smell and taste are the two primary modes of host discrimination. Knowing how pollinators identify their host plants in a landscape of perhaps thousands of species gives insights into the coevolved relationship between plants and insects and has important implications for population management, ecosystem services and, for those insects that are crop pests, like cabbage white butterflies, a potential mechanism for pest control.

Dr. Patch continued his work in insect olfaction for his doctoral thesis. Using a different model system, the tobacco hornworm, Dr. Patch discovered the first olfactory genes involved in the molecular detection of lepidopteron female pheromones. After coming to Penn State in 2010 Dr. Patch has expanded beyond the relatively simple interactions of host and mate detection. His current projects include understanding the mechanisms underlying patterns of pollinator-plant interactions in complex environments. Dr. Patch is involved in a large project to understand the impacts of honey bee declines in East Africa. He is also engaged in a detailed genetic analysis of honey bee populations, disease vectors and viral evolution. Closer to home, as chair of the Center for Pollinator Research's Arboretum committee he has been working to develop scientifically informed pollinator gardens at the Arboretum at Penn State.

LA CES: 1 CEU (satisfies HSW standard)

1:00-2:00 p.m.
Room 140

Perennial Grasses in Multifunctional Buffers to Benefit Water Quality and Farm Profitability

Steph Herbstritt, Ph.D. student
The Pennsylvania State University
University Park, PA

Summary:
Riparian buffers are a proven method for reducing nutrient and sediment pollution to surface waters, and are a major component of Pennsylvania's Chesapeake Bay Watershed Implementation Plan (WIP) to meet established Total Maximum Daily Load goals.

Progress toward the state's target of planting 95,000 acres of new buffers by 2025 has been slow. As of 2013, the Commonwealth had established fewer than 6,000 acres of buffers, meaning it will take decades to meet the goals of the WIP. In part progress has been slow because financial subsidies are limited, and farmers assume converting conventional annual cropland acres to perennials will reduce farm profitability. We challenged that assumption by modeling the economic and water quality impacts of converting economically marginal land to multifunctional riparian buffers that include marketable perennial biomass crops. Sub-field economic analysis, informed by high- resolution flood modeling from the Penn State Integrated Hydrologic Model (PIHM), was used to identify areas where frequent floods are detrimental to conventional annual crop yields in streamside fields in two watersheds in Pennsylvania, and where native perennial multifunctional buffers can benefit water quality and farm profits. Our group is using these integrated agronomic, environmental, and economic models to encourage farmer buy-in and implement multifunctional buffer field plantings during Spring 2018.

Through stakeholder engagement we are gaining farmer buy-in for plantings, establishing markets for native perennial biomass crops, and piloting novel financing mechanisms to provide more profitable multifunctional buffer alternatives. This project demonstrates a methodology the target audience needs to understand and can use for designing and establishing multifunctional buffers to both benefit water quality and sustain rural economies. We anticipate building new partnerships between members of the target audience—academic institutions, farm producers and supply chain businesses, landowners, government agencies, environmental groups, and rural communities—that together can address needs at the intersection of land conservation and preservation, water quality, farm profitability, and rural economic sustainability.

This presentation will serve as a precursor to our Chesapeake Bay Program Scientific and Technical Advisory Committee workshop (tentative November 2018) where we will continue to advance the science, engage stakeholders and break barriers to the growing a bioeconomy that can support buffer plantings, including farmer preferences for traditional cropping systems, lack of strong links between science, farming, industry, government, and environmental groups, and the infancy of regional biomass markets.

Bio:
Steph Herbstritt is a Ph.D. student in the Agricultural and Biological Engineering (ABE) Department at Penn State working with Tom Richard—the Director for Institutes of Energy and the Environment—on the synergies between water quality, farm profitability and sustainable energy. Steph previously completed her Master's degree in ABE at the University of Illinois, worked as an environmental consultant, and a hydrologist for the Susquehanna River Basin Commission. She's also a local Pennsylvania farmer, certified river rat and environmental enthusiast. Steph is passionate about planting native perennial grasses in multifunctional riparian buffers and is devoting her dissertation to this effort.

CCA: Soil & Water Management: .5 CEU
Sustainability: .5 CEU

2:05-3:05 p.m.
East Ballroom

Understanding Impacts of Conservation and Land Management on Grassland Biodiversity – Lessons Learned through Community-Based Conservation

Amy Johnson, PhD – Program Director, Virginia Working Landscapes
Smithsonian Conservation Biology Institute
Front Royal, VA

Summary:
The eastern United States hosts some of the most ecologically diverse communities in the country. With approximately 90% of this region under private ownership, it is essential that conservation managers engage with landowners to provide them with the knowledge and tools to optimize management practices for sustaining and promoting biodiversity and ecosystem function on working lands.

Virginia Working Landscapes (VWL) is a Smithsonian-led research initiative that works with citizen scientists to collect standardized inventory and long-term ecological data with the purpose of informing conservation approaches for native biodiversity. Since 2010, Smithsonian scientists have teamed up with universities, partnering organizations, landowners and citizen scientists to conduct biodiversity surveys on more than 150 public and private properties across a 16-county region in Virginia. Through the development of consistent survey protocols and rigorous volunteer training, the data has started yielding insightful results that can be applied to local land management.

In this presentation, Dr. Johnson will summarize lessons learned from the results of these surveys and highlight how grassland management influences native biodiversity in working grasslands across changing seasons. Participants will learn about the importance of biodiversity for sustaining ecosystem function and will gain science-based insight into the benefits of native grassland restoration in eastern grasslands with application to on-the ground management.

This program provides important examples of how citizen science can complement ecological research and emphasizes the power of community-driven partnerships while inspiring conservation action on private lands.

Bio:
Dr. Johnson is the program director for Virginia Working Landscapes, a Smithsonian-led research initiative that promotes the conservation of native biodiversity and sustainable land use through research, education and community engagement. In this role, Dr. Johnson cultivates a network of private landowners, citizen scientists, NGO's, state agencies and research scientists to collectively investigate the impacts of conservation management and land use on biodiversity. In addition to research, VWL has a strong outreach program that communicates research findings and best management practices through landowner meetings, lectures, workshops and farm tours.

A former Smithsonian-Mason Research Fellow, Dr. Johnson's Ph.D. research focused on the impacts of conservation and land management on breeding and over-wintering bird communities in Virginia. Specifically, her research is raising awareness on the importance of bobwhite quail conservation initiatives for conserving habitat for a suite of steeply declining species and is also providing insight into the benefits of native warm-season grasses for over-wintering bird communities.

CCA: Crop Management: .5 CEU
Sustainability: .5 CEU
LA CES: 1 CEU (satisfies HSW standard)

2:05-3:05 p.m.
Room 140

The Role of Shortleaf Pine in Native Grass Recovery
Mike Black, Director
Shortleaf Pine Initiative
Jasper, TN

Summary:
Shortleaf pine forests and associated habitats once covered a vast area of the continent stretching from the piney woods of Texas and eastern Oklahoma to the eastern seaboard from New Jersey to Florida.

Over the last 30 years, this extensive ecosystem has lost over 50% of its former acreage with the most significant decline east of the Mississippi River. Forests dominated by shortleaf pine can be thinned and burned to allow native grasses and forbs to develop, creating an extensive opportunity to promote grassland habitats.

To address the multiple threats facing this imperiled ecosystem, the Shortleaf Pine Initiative (SPI) was formed in 2013 with public and private organizations as well as state and federal agencies. Workshops were held across the range in 2013 to prepare a Shortleaf Pine Restoration Plan. This plan was finalized early in 2016.

Bio:
Mike Black has served as the director of the Shortleaf Pine Initiative at the University of Tennessee, Knoxville since 2014. Prior to joining SPI, he served as a forestry coordinator for the National Bobwhite Conservation Initiative. Mike earned his bachelor of science degree in forestry and land management, with High Honors, from the University of Tennessee in 1985. He is past chair of the Longleaf Partnership Council, serves on the management board of the East Gulf Coast Joint Venture; is a member of the advisory committee of the Oak Woodlands and Forests Fire Consortium. He was appointed to the Tennessee Forestry Commission from 2002 to 2007, serving as chairman from 2004 to 2007. He chaired the Tennessee Conservation League from 1999 to 2001. He served as Project Learning Tree facilitator for the Tennessee Department of Education, and was awarded State Facilitator of the Year in 1992. Mike was a district chairman for Tennessee Ducks Unlimited from 1997 to 2001. He also chaired the Sequatchie Valley Chapter of Ducks Unlimited from 1992 to 2005. He received the State Chairman's Honor Roll Award in 1993 and the Ducks Unlimited Conservation Service Award in 1994. Mike has been a Tennessee Wildlife Resources Agency hunter, bowhunter and boating education instructor since 1989. He was awarded Volunteer Instructor of the Year, Region III, in 1997 and Statewide Instructor of the Year in 2004. He is a life member of Quality Deer Management Association; and a member of the National Bobwhite Technical Committee, Tennessee Prescribed Fire Council, Society of American Foresters, The Wildlife Society, Tennessee Forestry Association, National Wild Turkey Federation, Ducks Unlimited, Pheasants Forever, Quail Forever, Quail and Upland Wildlife Federation and the Longleaf Alliance.

3:10 – 4:10 p.m.
East Ballroom

The Native Plant Palette: Sustainable Design for the Environment & Your Business

Paul R. Brydges, Principal
Brydges Landscape Architecture Inc.
Guelph, Ontario

Summary:
This presentation will explore the use of native grasses in large-scale residential landscape design.

Paul R. Brydges has over 30 years of experience in landscape design and construction and will engage Landscape Designers, Landscape Architects and Landscape Contractors alike with his presentation. The presentation will outline how his design firm, Brydges Landscape Architecture Inc., incorporates the native plant palette into a successful landscape design and how this unique design style has created overwhelming success for his firm and other companies they partner with. Over many years, Paul and his team have perfected their ability to promote native plantings to a wide range of clients by focusing on the beauty that they provide to their landscape. He then brings the client's attention to the science behind the art by promoting the many environmental benefits that native plants provide. This design philosophy has been a leading factor in the high success of Paul's design firm. Designing with natives for more than a decade has proven to be of great corporate success, creating a style that clients now seek them out for. This design style/brand has also benefited over 20 Landscape Contractors whom Brydges Landscape Architecture creates unique, build-able designs for. Paul's long-term partnerships with numerous Contractors has contributed to their continued business growth, even through the economic downturn.

This presentation will complement the symposium theme by bringing awareness to the environmental impact that designing with native plants has on a residential scale as well as how Brydges Landscape Architecture has developed their company philosophy and become well recognized for their use of native plants in the landscape.

Paul will also speak to their experience in relation to related partners and stakeholders throughout the design and construction process. Various conservation and governing authorities must be involved on many larger waterfront properties and sensitive areas. Paul can offer his guidance and recommendations for engaging these authorities, as they often require or request native species.

Bio:
Paul R. Brydges, principal and senior landscape architect of Brydges Landscape Architecture Inc. has spent much of his career working closely with many facets of the landscape profession to better educate both professionals and lay-people about the value and role of landscape architects.

Paul is currently past president of Landscape Ontario and held the position of president for the years 2016-2017. He is the first practicing landscape architect to hold this position. Paul has also been on the provincial board of Landscape Ontario as design sector Rep for many years. He is one of the founding members of the Landscape Architecture Alumni Association for the University of Guelph and liaison between the Ontario Association of Landscape Architects and Landscape Ontario. Paul is a current member of ASLA, APALA, CNLA, CSLA, GRHC, LO, OALA and a Fusion Landscape Professional.

After graduating from the Bachelor of Landscape Architecture program at the University of Guelph, Paul pursued his career along the east coast and through southern United States. This, in conjunction with extensive travel and research, have given him an appreciation for different design styles and site requirements, which continue to motivate his latest unique designs.

LA CES: 1 CEU (satisfies HSW standard)

3 :10 – 4 :10 p.m.
Room 140

Enhanced Establishment and Sustainable Defoliation Management of Native Warm-season Grasses

Vitalis W. Temu, PhD
Agricultural Research Station
Virginia State University
Virginia State University , VA

Summary:
Dr. Temu's presentation covers research findings from studies on alternative methods for faster establishment of native warm-season grasses with emphasis on strategies for effective weed control and early stand defoliation management conducted at Virginia State University over the past 5 years. The studies focused on generating information that may be helpful to resource limited farmers interested in year-round forage-based small ruminant production. Two major constraints to profitable small ruminant production in the Southeast are summer forage shortages (summer slump) and gastrointestinal nematode (GIN) infections. Native warm-season grasses have the potential to improve summer forage production, thanks to their ability to sustain growth under hot dry conditions, as well as that of their morphological architecture to minimize the chances for animals to ingest parasites on the ground and also inter-grow better with bioactive forages.

Bio:
Dr. Vitalis Temu, is an associate professor at Virginia State University (VSU) where he heads the Forage Ecology and Management Program in the Agricultural Research Station. Dr. Temu is a broadly trained researcher in agricultural sciences having earned an associate degree in Range Management from Morogoro Livestock Training Institute, a Bachelor and Master's Degrees in Animal Science from Sokoine University of Agriculture, in Tanzania, his home country, and a PhD in Agronomy from Mississippi State University (MSU). His dissertation is titled "Growth response of mixed native grass stands to simulated grazing in Mississippi:-Forage yield and species dynamics". He has over 28 years of research experience on plant-animal-environment interactions in agricultural systems of which, about 16 were on pasture development and sustainable forage utilization in semi-arid rangelands of central Tanzania. There he worked mostly on the control of undesirable range plants, nonconventional livestock feed resources including trees and shrubs, and integrated nutrient management in agro-ecosystems. His studies were mainly funded by the International Foundation for Science, the Research Program for Sustainable Use of Dryland biodiversity, and the Association for Strengthening Agricultural Research in Eastern and Central Africa. In the US, Dr. Temu has worked more on ecological grassland management with emphasis on ecosystem services associated with native warm-season grasses in agricultural landscapes. He started as a Graduate Research Assistant in the Plant and Soil Sciences Department at MSU where he assessed switchgrass seed quality responses to mid-season harvest, revegetation success in surface mine sites, and defoliation management of mixed native warm-season grasses for forage and wildlife habitat. Upon completion of his Doctorate program, Dr. Temu accepted a faculty position in August of 2011 at VSU where he now works on problems faced by small ruminant producers in Southside Virginia, mainly summer forage shortages and gastro-intestinal nematode infections. Since joining VSU, Dr. Temu has published at least 11 peer reviewed Journal articles, seven of which he is the lead author. He has also co-authored one book chapter, gave numerous conference and seminar presentations, and is an academic Board member of the Virginia Forage and Grassland Council. There has been the Director or Co-Director of at least 10 externally funded projects, totaling over $1.5 million, four of which were launched in 2018 alone.

CCA: Crop Management: 1 CEU

4:15 – 5:15 p.m.
East Ballroom

The Croton Grassland: A Wild Tale of Weeds, Wildlife, Waste & Renewal

Jenna Webster, Designer
Larry Weaner Landscape Associates
Glenside, PA

Summary:
How do you turn around a weed-infested grassland when many of the necessary restoration steps conflict with imperiled bird species already using that grassland? Learn how a unique restoration and management plan for a 100-acre grassland atop a capped landfill within a historic park in the Lower Hudson Valley negotiated this challenge by synthesizing crowd-sourced data, published research, field experience, and a vision steeped in the site's complex, intriguing history.

This case study, analyzed in depth, offers lessons for a wide range of grassland projects, whether designed habitats or naturally occurring. Session attendees will receive a handout detailing practical take-aways from the Croton project, guidelines for developing restoration and management plans, guidelines for preventing weed incursion and establishment, and guidelines for wildlife-sensitive grassland management.

Attendees will learn practical strategies for restoring and managing existing grasslands where both desirable and undesirable vegetation is present. Understand how to design and implement grassland restoration protocols that minimize impacts to resident wildlife, including rare and threatened species. See how crowd-sourced data, field experience, and site history can be interwoven to create a practical yet inspiring restoration plan that achieves habitat goals and engages visitors to a popular and historic park.

Bio:
Jenna Webster has been a designer with Larry Weaner Landscape Associates since 2009. She develops landscape plans and habitat restoration plans for a wide variety of residential and public projects, including a restoration plan for the 100-acre grassland at Croton Point Park in Croton-on-Hudson, New York, a meadow design and interpretive elements for the Jay Heritage Center in Rye, New York, and a landscape master plan for a 160-acre research center in Stafford, Virginia. In addition to her design work at LWLA, she co-curates the annual New Directions in the American Landscape (NDAL) conference series, which received the 2017 Regional Impact Award from the New England Wildflower Society. She holds a M.A. from the Conway School, a graduate program in sustainable landscape planning and design as a well as a B.A. and M.Ed from Harvard University. She serves on the board of the Crow's Nest Research Center, is a member of the Professional Advisory Council for the Department of Landscape Architecture at the University of Delaware, and teaches in the ecological design certificate program at the Mt. Cuba Center in Hockessin, Delaware.

LA CES: 1 CEU (satisfies HSW standard)

4 :15 – 5 :15 p.m.
Room 140

Interpretation of Soil Tests for Warm Season Grasses and Associated Meadows

Joel Hunter, Educator, Field and Forage Crops
Penn State Extension
Meadville, PA

Summary:
The scope of this presentation will be important aspects of soil fertility testing for native grasses and forbs (as well as most other "crop production" scenarios) across the Northeast. Soil fertility testing should essentially interest those trying to predict the probability of a profitable response to fertilizer and lime.

Joel's presentation will illuminate the four key fundamental aspects of routine soil fertility testing: sampling, analysis, interpretation of results, and recommendations. In the Northeast we must recognize that soil can be highly variable and obtaining a representative sample is a priority. Recommended sampling options and guidelines will be presented.

The soil analysis must be rapid and inexpensive to be practical. Soil tests must be empirically related to plant response. Soil test methods are developed for specific soil and climate conditions present within a given region. The solution(s) used to extract nutrients in one region are often not appropriate for soils found in other regions. Furthermore, nutrient extractants used in soil analysis are a continuum of nutrient analyses rather than a discrete measurement. Fortunately, working groups of soil fertility specialists in each region of the US have worked together to develop standardized analytical methods. Soil pH is a fundamental soil chemical property and the single most important soil chemical property we can measure. It is considered the master variable and influences mineral solubility, microbial activity, and nutrient availability. Both active (solution pH) and exchangeable (reserve) acidity are discussed, as is buffering capacity, the ability of a soil to resist pH change. Soil acidity and nutrient availability are critically related. Nutrient quantity and intensity and factors that affect them will be explained. Solubility of most of the essential macronutrients are limited in acidic soils (the humid Northeast) while micronutrients are limited in alkaline soils (the arid West.) Judicious management of soil acidity is critical. Finally, the estimated Cation Exchange Capacity (CEC) is reviewed as a fundamental concept of analyzing soil nutrient availability.

Interpretations of the analytical results from the laboratory are accomplished through correlation and calibration. Response curves are helpful tools used to illustrate nutrient availability ranges of deficiency, sufficiency, and above optimum (more than adequate.)
Lastly, recommendations generally are based on one of three basic philosophies:
The Sufficiency approach (feed the crop), the Buildup and maintenance approach (feed the soil), and the Cation saturation approach, which is not well supported by observational evidence.

Bio:
Joel Hunter is the Penn State Cooperative Extension Agronomy Educator for NW PA based in Crawford County. He is a member of the Agronomy (Field and Forage Crops) team. Two particular areas of professional interest include soil health through no-till systems with cover crops/rotations and forage quality -- particularly cool season grasses and corn silage hybrids. More recently, program efforts have included local oilseed production/development as well as malting barley and hops production/processing. Joel's work has afforded him opportunities for international travel including visits to Kazakhstan, Brazil, Argentina, Paraguay, the Republic of Georgia, and most recently Kenya. In both Kazakhstan and Kenya, Joel served as a dairy advisor focusing on the production and feeding of quality forages.

He received both his B.S. and M.S. degrees in Agronomy from Penn State. His Master's thesis was on root/soil/water interactions in corn. Joel's been an American Society of Agronomy Certified Crop Advisor since 1994. Joel's past industry experiences over a decade includes work in field seed production, fertilizer, pesticides, dairy, and related research. Joel served as Crawford County Extension Director for ten years, and he has been in his present position since 1995.

CCA: Nutrient Management: .5 CEU

BRINGING LONGLEAF BACK

The mission of The Longleaf Alliance is to ensure a sustainable future for the longleaf pine ecosystem through partnerships, landowner assistance and science based education and outreach. We are the only conservation nonprofit organization solely dedicated to restoring the longleaf ecosystems of the South.

www.longleafalliance.org

Wednesday, September 19

7:00 – 7:45 a.m.

Breakfast (East Ballroom)

7:45 – 8:45 a.m.

Opening Plenary Session

East Ballroom

Restoring Woodlands and Savannahs in the Eastern US: Lessons Learned from a Decade of Research

Patrick D. Keyser, Ph.D., CWB, Professor and Director, Center for Native Grasslands Management
Andrew L. Vander Yacht, Ph.D.
Chrissy Henderson
University of Tennessee
Knoxville, TN

Summary:
For a decade, research conducted at the University of Tennessee has explored how to effectively restore open-canopy communities within eastern oak forests. These woodlands and savannahs were once extensive in this region as a result of frequent fires. However, altered fire regimes resulted in the almost complete elimination of such communities and substantial degradation of remnants. Consequently, associated wildlife populations also experienced declines. A long-term, field experiment conducted at three sites (NC and TN) has explored responses of vegetation and breeding birds to community restoration treatments including, canopy reduction to woodland (60 sqft residual BA) and savannah (30 sqft residual BA) targets and prescribed fire (March and October). Dr. Keyser and his team observed shifts in woody species with mesic species being reduced and oak regeneration being increased. Increases in Shortleaf pine regeneration and fire-adapted C4 grasses were also observed. Most striking though, were the dramatic increases in species richness and diversity of forbs and grasses.

With respect to breeding bird communities, both occupancy and abundance were strongly influenced by key measures of structure. Early successional avifauna responding positively to increased herbaceous ground cover and decreased live basal area (LBA); associations with mid-story density were weaker and less consistent. Furthermore, occupancy of most late successional species was not sensitive to disturbances associated with restoration with a few exceptions, notably birds that nested or foraged in leaf litter. However, several late successional species indicated some level of disturbance-dependence with positive responses in abundance to canopy reduction across some range of LBA. Early successional species were almost completely absent from controls leading to reduced species richness in these stands. Red-headed woodpeckers selected for pine snags for nest cavities and had very high nest survival rates. Prairie warblers selected nest sites with greater herbaceous groundcover although this did not influence nest survival, which was quite low in the breeding season immediately after burning and was comparable to other studies one year post-fire.

Woodland and savannah restoration treatments involving canopy reduction and re-introduction of prescribed fire provide positive benefits to imperiled early successional wildlife in oak forest ecosystems and do not appear to negatively impact most species associated with later seral stages.

Bio:
Dr. Keyser is a Professor and Director for the Center for Native Grasslands Management. In that role, Dr. Keyser provides regional and national leadership in the development and implementation of comprehensive research and outreach programs focused on a broad range of issues pertinent to the management of native grasslands. This includes work on use of native grasses in forage production systems for livestock, biofuels production, the integration of forage and biofuels, answering specific management questions for native grasses, restoration of natural grassland communities such as woodlands and savannahs, and wildlife responses to native grasslands management.

8:50 – 9:50 a.m.
East Ballroom

Proven Methods of Establishing Native Grasslands and Meadows

John Seymour, President
Roundstone Native Seed, LLC
Upton, KY

Summary:
Successful establishment of native grasslands, meadows, and savannahs can be an exercise in futility, and even selecting goals such as aesthetics, wildlife habitat, pollinator conservation, erosion control, or forage and biomass production can be a daunting task since many prefer a multi-purpose result. We have developed and will demonstrate the processes, planning, and steps needed for successful native plant selection, establishment, and maintenance. These proven establishment methods will appeal to anyone hoping to learn how to establish and maintain grasslands, meadows, or savannahs, from landscape architects, landscape designers, environmental consultants, wildlife agencies, to large-scale contractors, or backyard enthusiasts. Everyone should have an understanding of the intricacies of native plant establishment in order to prevent unattainable expectations.

Native prairies, grasslands and savannahs were historically prevalent in the eastern U.S. in pre-Columbian times. In order to provide appropriate species to recreate these areas, native seed producers have a trying mission. There is such an abundance of native species in native remnant prairies that it can be difficult to recreate this diversity in a new establishment, and to compound the problem, many native species do not perform well with conventional agricultural practices. From our experience of growing native species in a monoculture setting for the past 22 years, we have learned methods for effective multi-species restorations. Successful native plant establishment can take several years and begins with site preparations to remove existing introduced or invasive species though physical or chemical means. Seed placement and planting depth can have lasting effects on the prairie, and if seed is planted too deep it may lay dormant for many years until disturbed and brought to the appropriate depth. Even if all steps are followed and native plants begin to grow, without proper maintenance, a planting can turn into a sapling forest in a surprisingly short amount of time.

Bio:
John Seymour is the co-founder, co-owner, and president of Roundstone Native Seed, LLC. Over 20 years ago, John and his father Randy started converting their family farming operations over to native seed production. Since then, John has personally overseen every aspect of Roundstone's operations and growth. That growth includes initial wildland collections, seed cleaning and conditioning, and commercial production operations of native grasses, wildflowers, and wetland plant species. John has a passion for farming and native plants. He attended Western Kentucky University with an emphasis in agriculture. He lives on his home farm at Roundstone in Hart County, Kentucky with his wife and children. Roundstone operations serves as a training body for various groups from the technical aspects of plant growth to the broad aspects of stand maintenance and design.

CCA: Crop Management: 1 CEU
LA CES: 1 CEU (satisfies HSW standard)

8:50 – 9:50 a.m.
Room 140

Multifunctional Design of IDOT Rights-of-Way: Pollinator Habitat and Biomass Production

DoKyoung Lee and Colleen Zumpf
Department of Crop Sciences
University of Illinois
Urbana, IL

Summary:
The Illinois Department of Transportation (IDOT) owns more than 100,000 acres of land along rights-of-way (ROW) which requires time, money, and labor to maintain annually. In the interest of expanding ROW land potential to both reduce maintenance costs while providing potential environmental and economic benefits, planting of native grasses and pollinator herbaceous species along ROWs was assessed as a potential alternative. The design of ROWs using native species, however, has to match the needs and restrictions for ROW management, such as safety (plant height requirements), reduced maintenance (low input costs; ease of species establishment on lower quality/marginal land), environmental benefits (pollinator habitat provision), and potential economic benefits (biomass for bioenergy production).

A site near Edwardsville, IL along I-255 was selected for the field evaluation of two specific practices. The first goal was to assess economic feasibility and practicality of utilizing larger tracts of IDOT-owned land for biomass production by assessing production of switchgrass (Panicum virgatum 'Kanlow') and a mixture planting of big bluestem (Andropogon gerardii 'IL') and indiangrass (Sorgastum nutans 'Rumsey') in a 4-ha field. First year harvest results found biomass production to be low, only 1.7 Mg ha-1, due to the combination of low soil quality with poor drainage and stand age. The second goal was to assess grass and pollinator plant species mixtures, ratios of those mixtures (grass : pollinator species in the mixtures), and planting practices (mixing grass and pollinator species together or alternate row planting) to determine their effects on pollinator plant species establishment in the interest of increasing pollinator habitat provision along roadside ROWs.

Preliminary results from 2017 on pollinator species establishment show the three milkweed species (Asclepias spp.) including butterfly milkweed (A. tuberosa), common milkweed (A. syriaca) and swamp milkweed (A. incarnata) were the most common pollinator species across all the plots along with partridge pea (Chamaecrista fasciculata). However, some pollinator species in the mixtures may require a vernalization period prior to germination, as verified in a greenhouse study and therefore an additional year of evaluation (2018) will be required to assess pollinator species establishment. Additionally, 2017 results showed no difference in treatments based on the number of pollinator species present. However, based on the previous statement along with likely change in dynamics between grass and pollinator species as the plants mature, it may be too early to recommend a planting strategy or planting mixture based on the 2017 results alone. However, future results of this study may be useful in determining the practicality of utilizing ROWs for additional applications including pollinator habitat and potentially biomass production for bioenergy.

Bio:
DoKyoung "D.K." Lee is an associate professor of biomass and bioenergy crop production and an extension agronomist in the Department of Crop Sciences at the University of Illinois. He has an extensive educational background in crop production, perennial grasses, soil science and international agricultural. Dr. Lee's research focuses on advancing perennial grass productions systems for sustainable biomass and bioenergy feedstock and improving ecosystem services. He works to improve the genetics and abiotic stress tolerances of perennial grasses and develop best agronomic management practices for integration of perennial grasses into our current row cropping systems to improve sustainability and ecosystem services including water quality.

Colleen Zumpf is a research associate and project field manager at Argonne National Laboratory and a Ph.D. student at the University of Illinois Urbana-Champaign with a focus in agronomy. She holds a Master's Degree in Environmental Biology (2015, Governors State University, USA) and a Bachelor Degree in Environmental Science and Biology (2012, Monmouth College, USA). Her research includes a focus on water quality and bioenergy production in agricultural landscapes, as well as the evaluation of plant response in water limited environments. Her research interests include land management impacts on ecological systems and community ecological dynamics.

9:55 – 10:55 a.m.
East Ballroom

Natives on Steep Slopes, What the HEL: How Natives' Form & Function Allow Us to Use Them for Erosion Control

Robert Hoffman, Consulting, Sales and Design
Roundstone Native Seed, LLC
Upton, KY

Summary:
Debunking the myth that natives Species do not work on Highly Erodible Land (HEL). For so long we have instantly gone to using introduced species when steep slopes are involved. Even still today we have government regulations that are requiring the contractor to use introduced species over natives. During the early years natives' species establishment, stand failures were a common occurrence. Follow that up with natives' slow growth habitats and bunch forming characteristics that expose bare ground has lead people not to trust natives for erosion control. We have explored the use of native species for these areas and have found that they are up to the task. This presentation will look at several project sites that have highly erodible areas where native species are the solution. We will look at each sites' project goals and the technique for an establishment that led to their success. Each project site used a different technique to achieve the main goal of erosion control while achieving their secondary goal. Some of the projects secondary goals include woody suppression, lower maintenance cost, pollinator habitat, and aesthetics. Techniques for establishment include the use of nurse crops, no-till, hydroseeding, and plugs. Following four different partner projects through planning to the establishment and how each one became a success shows real-world achievements.

Bio:
Robert Hoffman Is the Restoration Ecologist and Wildlife Biologist for Roundstone Native Seed. He travels the eastern United States promoting the use of native species and consulting with clients on the proper installation and management techniques for native species for a wide variety of land uses and goals. He also performs project management for over two dozen projects annually giving him real-world exposure to best management practices. Robert has a B.S. in Natural Resource Management from the University of Tennessee at Martin and a M.S. in Wildlife Ecology and Conservation from the University of Florida. When he is not working, he is enjoying time with his wife, Ashley, and his three children.

CCA: Soil & Water Management: 1 CEU
LA CES: 1 CEU (satisfies HSW standard)

9:55 – 10:55 a.m.
Room 140

The Grassland as the Integrating Context to Teach STEM

Thelma Redick, Senior Director, Conservation Content and Partnerships
Wildlife Habitat Council
Silver Spring, MD

Summary:
Drawn from case-studies from thirty years of Conservation Certification projects with the Wildlife Habitat Council, the presentation is aimed at attendees who install and maintain meadow restoration projects and wish to engage community. We will explore how these landscapes, whether in the process of restoration or fully restored, may be used to engage the community in STEM (Science, Technology Engineering and Mathematics) learning. By adding value in using the landscape as an 'outdoor learning laboratory,' restoration and grasslands meet not only conservation goals but also meet the needs of the human community, by providing a place where learners may:

- apply math and science to a real-world environment
- integrate the use of technology and solve basic engineering challenges
- build critical STEM skills (data collections, working collaboratively, communication)

In addition, conservation and restoration projects can reach underserved communities and show examples of people in STEM careers to those students. Through case studies of corporations/business who have worked with government, NGO's and community partners such as schools and scout groups, participants will understand how to establish effective partnerships, adapt existing exemplary curricula, measure success.

The presentation celebrates the theme Form & Function: Grasslands and Meadows in the Converging Landscape in that it explores the intimate connection of people and place—a connection that must exist if any restoration project is to succeed. The most successful projects provide value to the human community, as well as to the natural ecosystem; and by engaging young people to become science literate, critical-thinking, active citizens, current conservationists are also contributing to overall conservation goals on a regional, national and international stage, as well.

Bio:
Joining the Wildlife Habitat Council staff in 2003, Thelma Redick currently holds the position of senior director of conservation content and cartnerships. Thelma brings more than 25 years' experience in conservation education and community engagement, specializing in place-based learning and building productive partnerships. Along with overseeing the coordination of partnership plans and agreements, Thelma directs the annual Conservation Conference, on-ground workshops and training offerings and manages WHC's on-line learning, the Conservation Academy. In addition, she coordinates the use of data gathered from WHC's rigorous certification process to share the conservation contributions of the corporate community.

Thelma holds a Masters in Non-profit Management from Robert Morris University, along with undergraduate degrees in Communications and Management; she also completed study in Conservation Ecology at Chatham College's Rachel Carson Institute, earning certifications in Environmental Education and Ecological Landscape Design. Before Joining the staff she worked as a freelance filmmaker, curriculum writer and was director of professional development with ASSET (Pittsburgh, PA), and held positions with the Pittsburgh Civic Garden Center and Phipps Conservatory.

11:00 – 11:30 a.m.

East Ballroom

Multi-acre Solar Arrays that Benefit Pollinators, Soil and Water

Rob Davis, Director, Center for Pollinators in Energy
Fresh Energy
St. Paul, MN

Summary:
The United States is experiencing explosive growth in the development of ground-mounted solar arrays. This session will provide an overview of the market forces driving this growth as well as look under the panels at specific case studies of the increasingly common practice of developing low-growing, flowering perennial meadows throughout solar sites.

The session is a must for attendees looking to stay abreast of this new market opportunity, learn more about solar, and learn about the criteria being used to evaluate the success of pollinator-friendly solar projects.

The presentation will emphasize the collaborative nature of both stacking multiple benefits into solar arrays by using biodiverse native seed mixtures and calculating the business return on investment.

Bio:
Rob Davis is a director at Fresh Energy where he leads the nonprofit organization's work building partnerships to realize numerous benefits from America's accelerating transition to clean energy. Davis' work on pollinator-friendly solar has been recognized by the U.S. Department of Energy and featured in training by the U.S. Department of the Interior's National Conservation Training Center and the Electric Power Resource Institute. Previously, he helped launch technology start-ups and created the international crowdsourced campaign that launched the Firefox web browser. He is a two-time recipient of the Teresa Du Bois Exline Award for Best Practices in Communications and Marketing and a graduate of Macalester College.

11:00 – 11:30 a.m.
Room 140

Integrating Native Grass Grazing Management and Northern Bobwhite Habitat

Jef Hodges, Grassland Coordinator, National Bobwhite Conservation Initiative
University of Tennessee Institute of Agriculture
Clinton, MO

Summary:
Northern bobwhite populations have experienced a long-term average decline of 92% range-wide since 1970. Despite repeated concentrated attempts to restore bobwhite numbers, success has been limited. Traditional bobwhite management in the eastern United States has excluded grazing even though bobwhites evolved with fire and grazing. Limited scientific research of grazing and bobwhite interactions in the eastern United States exists, however research from the western range of bobwhites, grassland bird research from the east and anecdotal experiences are providing some insight into grazing management of native grasses compatible with bobwhite habitat.

Bio:
Jef Hodges received a Bachelor of Science from the University of Missouri in Fisheries and Wildlife. Before becoming grassland goordinator for the National Bobwhite Conservation Initiative, his work experiences include the University of Missouri, Missouri Department of Conservation, a native vegetation seed production company, the now defunct Quail Unlimited as a regional director and biologist, and was self-employed as a conservation contractor specializing in native vegetation establishment and management and prescribed fire services. He is a Certified Wildlife Biologist and an USDA Registered Technical Service Provider. He is a second generation owner of a family farm which he manages for biodiversity with an emphasis on bobwhite density.

CCA: Sustainability: .5 CEU

11:30 a.m.-12:00 p.m.
Vendor Break

12:00-1:00 p.m.
Lunch
East Ballroom

1:00-2:05 p.m.
East Ballroom

Establishment, Enhancement and Reinforcement of Vegetative Solutions

Warren Cohn, CPESC, CPSWQ, Geosynthetic Consultant
Gregory J. Kramer, CPESC, Territory Sales Manager
ACF Environmental

Summary:
This introductory presentation will cover a wide range of manufactured materials that provide temporary protection while vegetation establishment takes place. The post construction reinforcement aspect of permanent products is also covered. There will be a "hands-on" aspect of the presentation so that the audience can attain a better feel for the actual materials discussed. Expected learning outcomes are understanding of different materials provide specific performance relative to their physical properties; developing awareness of the testing methods and evaluation that provide the performance indicators for each product; and how to reduce erosion prevention cost through the knowledge and usage of the presented information.

Bio:
Warren Cohn is an independent geosynthetic consultant. He was a BMP product & stormwater specialist with ACF Environmental for seventeen years, assisting engineers, owners, contractors and regulators with geosynthetic solutions for stormwater management. Previously Warren held similar positions with American Excelsior Company and Propex Inc. Warren is a Certified Professional in Erosion and Sediment Control (CPESC) and a Certified Professional in Storm Water Quality (CPSWQ), and is also an authorized instructor of both of the program's review courses.

Greg Kramer is a native of Pittsburgh, PA. He has been involved in erosion & sediment control in Pennsylvania for the last 30 years. Greg started his career with American Excelsior in 1985. He has been with ACF Environmental as the western Pennsylvania territory sales manager for the last 20 years. His responsibilities include sales in Western PA, as well as assisting engineers and contractors with geosynthetic solutions for stormwater management & erosion & sedimentation control. Greg is a Certified Professional in Erosion and Sediment Control (CPESC) and served previously as the Western Pennsylvania representative for that organization.

LA CES: 1 CEU (satisfies HSW standard)

1:00 – 1:30 p.m.
Room 140

Quantifying the Role of Native Warm Season Grasses in Sequestering Soil Organic Carbon (1999-2015) in a Coastal Plain Soil

Christopher F. Miller, M.S., Manager/Plant Specialist
Cape May Plant Materials Center, USDA NRCS
Cape May Court House, NJ

Summary:
A study was initiated at the USDA-NRCS Cape May Plant Materials Center in 1999 to determine the amount of carbon sequestration that occurs under native warm season grasses over time relative to cool season (C3) grasses. The study took place in a Downer sandy loam soil series. (New Jersey State Soil). Plots of 5 native warm season (C4) grasses; switchgrass (Panicum virgatum), coastal panicgrass (Panicum amarulum), big bluestem (Andropogon gerardii), indiangrass/little bluestem (Sorghastrum nutans/Schizachyrium scoparium) and eastern gamagrass (Tripsacum dactyloides), were established in a killed tall/red fescue (Festuca arundinacea/rubra), orchardgrass (Dactylis glomerata), and bluegrass (Poa pratensis) mixed sod using Round-Up herbicide. A Tye no-till planter was used to drill the seed on a 42" row spacing. The plots are 16' x 20' in size and replicated 4 times. Establishment of the native grasses took 2 full growing seasons with some cool season grass pressure during the critical establishment period. In addition, an understory of introduced cool season grasses remained throughout the study. Soil core samples to a depth of 1 meter were taken with a hydraulic soil probe by the USDA-ARS Pasture Systems and Watershed Management Research Unit in 1999 at project initiation with follow up sampling in 2003, 2010 and 2014. Samples were analyzed for soil organic carbon (OC) for each of the sampling periods.

The results show that after 15 years of established native warm season grasses, none of the grass species led to a significant change in soil OC by depth. Some means go up a little since 1999 and some come down a little, but there were no consistent trends and the differences are not statistically different. The authors hypothesize that this sandy coastal plain soil was already OC saturated at shallower depths under the C3 turf grasses that were growing prior to conversion to the warm season grasses. Even though the native warm season grasses have greater potential for increasing soil OC, this coarse textured sandy loam soil doesn't appear to have the capacity to accumulate more soil OC in this coastal plain environment. We learned that in the end, maintaining a perennial grass cover exclusive of the species type, is valuable in maximizing soil OC sequestration. Another result is that the no-till seeding method used to establish the native grass species did not lead to a loss of OC following conversion. That could be valuable information since converting from a C3 cool season grass to a C4 warm season grass has benefits beyond soil OC sequestration. We hypothesized that the results might have looked much different if the native grasses had been established on a site that have been previously tilled, planted to row crops and/or had been a more marginal, degraded land use. In this case, we probably would have seen a marked increase in soil OC over the 15-20 year span.

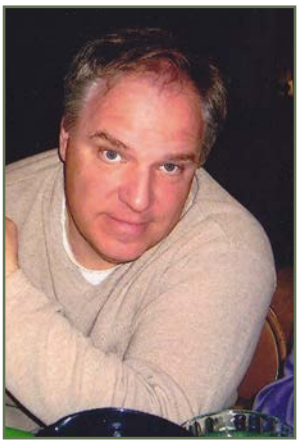
Bio:
Chris Miller is currently the manager of the USDA-NRCS, Cape May Plant Materials Center. He has been manager for 10 years. Prior to this position, he served for 18 years as a plant science consultant to NRCS state and field offices in the Northeastern and Mid-Atlantic states. He has provided guidance on techniques and plant selection for stabilizing disturbed and eroding areas such as dunes, tidal shorelines, streambanks, and mined areas. He also makes vegetative recommendations for many NRCS conservation practices, including critical area stabilization, conservation cover, pollinator habitat, filter strips, riparian areas, grasslands and wetland restoration plantings. Chris has a B.S in Agronomy (soil science emphasis) from Penn State and an M.S. in Plant Science from the South Dakota State University.

CCA: Soil & Water Management: .5 CEU

1:35 – 2:05 p.m.
Room 140

Viability of Prairie-base Filter Sock in the Eastern U.S.

Michael Zock, Technical Consultant
MKB Company
Saxonburg, PA



Summary:
Tubular perimeter erosion control products have been in the U.S. Erosion & Sedimentation (E&S) market for many years now. The most commonly used fill materials are cereal straw (wheat, barley, rice, etc.) and composted wood product (ward waste, land clearing debris, ground slab wood from lumber mills, etc.). Work is now underway to assess the viability of using prairie grass (such as miscanthus and switchgrass) as fill material. This talk will discuss the multiple points of investigation (sediment filtration, longevity, sourcing raw material, pricing, scalability, etc.) and current findings being discovered during this process.

Bio:
Mike grew up in Harborcreek, PA. He attended Cathedral Prep and earned a degree in Information Science at the University of Pittsburgh.

He started his professional career at Westinghouse Nuclear. He soon found himself in Silicon Valley supporting and designing computer networks at the beginning of the high-tech boom. He came back to Pittsburgh to work for FORE Systems in various roles including principal network architect. Mike has designed or consulted on major computer networks all over the world. At 35, he wanted to do something different. He started building homes and residential developments and consulting civil engineers before launching an environmental startup to service the oil, gas and construction industries in 2011.

Today, the group Mike founded, MKB Company, is an industry powerhouse with multiple factories selling sediment control products across 22 states. It was recently a prime supplier to the Mariner East and Atlantic Sunrise pipeline projects, two of the largest ever done in Pennsylvania. He continues his entrepreneurial spirit as an inventor with six patents submitted and providing strategy and innovation consulting for various organizations.

2:10 – 3:15 p.m.
East Ballroom

Rediscovering a Lost Landscape: A Horticultural Homage to the Southeastern Piedmont Prairie

Annabel Renwick, Curator
Blomquist Garden of Native Plants, Sarah P. Duke Gardens
Duke University
Durham, NC

Summary:
Dr. Renwick's talk will focus on the design and construction of a piedmont prairie-inspired landscape in the Blomquist Garden of native Plants at the Sarah P. Duke Gardens. During the past three years, the staff of the Blomquist Garden, inspired by the fragile, fragmented remnants of the once expansive piedmont prairie ecosystem, have created a one-acre interpretation of this biodiverse natural landscape. Using wild seed from over one hundred species of grasses and forbs, all collected by staff from sites within twenty miles of Duke Gardens, he team produced in-house over twenty thousand plugs for its prairie landscape.

Extensive field research conducted in existing prairie remnants was used to inform their ecosystem-based planting design and species mix. Planted in 2015, the project's subsequent growth and maturation has garnered attention from landscape architects and designers, as well as lay visitors, all of whom marvel at the plant and insect diversity now to be found in a space that had been essentially a southern yellow pine monoculture. Not only have those in the landscape industry taken notice, but Duke University faculty and students have begun to use the space as a research plot for, among other things, a valuable site to monitor insect diversity. Perhaps the most rewarding outcome has been the copious community partnerships that the staff have formed with local corporations and environmental non-profits.

Using lessons learned in the design, construction and monitoring of this diverse landscape, staff now act as consultants to these groups to aid in the creation of new urban biodiversity hotspots similar to their prairie. As a result, local interest is growing in and awareness is being raised about both the rich natural heritage, and the need to enhance urban, often depauperate landscapes with local-ecotype native grasses and forbs.

The main theme of this talk will be the richness that can be found in using local-ecotype native species within the context of a design inspired by native grassland ecosystems.

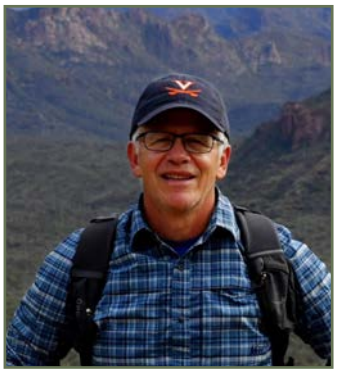
Bio:
Dr. Renwick is from Durham England, she received her Ph.D. from the University of Wales, Aberystwyth studying grassland communities. She went on to work as a plant research scientist at several universities as well as industry in Britain, France and Germany. Prior to coming to North Carolina, Dr. Renwick turned to her passion for gardening and trained as a garden designer at 'The English Garden School' in Chelsea, London. The intersection of grassland communities, design of landscapes and ecological research has culminated in the design and development of Sarah P Duke Garden's rendition of a Piedmont Prairie Annabel's main achievement since becoming the horticulturalist in the Blomquist Garden of Native Plants in 2012.

LA CES: 1 CEU (satisfies HSW standard)

2:10 – 2:40
Room 140

Management of Non-native Annual Species Using Contact Herbicides

J. Walter Bland, Managing Partner
Rock Spring Restorations
Atlanta, GA



Summary:
Non-native, annual species such as Digitaria ssp. (Crabgrass), Microstegium vimineum (Japanese stiltgrass), Eleusine indica (Goosegrass), Mosla dianthera (Chinese basil) pose significant problems for managers of native habitats, especially in locations where prescribed fire is not an option. These species reproduce and expand quickly, displacing native species and diverting resources. They usually grow in the midst of desirable species making management difficult. Traditional management techniques, such as spot spraying with systemic, non-selective herbicides, are labor intensive and often result in damage to desirable species. We have been using contact herbicides for control of these species and have had good results.

Key findings indicate that contact herbicides such as pelargonic acid, sulfuric acid, and diquat are cost effective tools to control and eradicate non-native, annual species, while minimizing damage to desirable species. Good results are achievable when applications are timed correctly and proper concentrations are used.

Participants will be able to identify target species, learn how to time applications and calibrate chemical solutions for most effective results.

Bio:
Walter Bland is the managing partner of Rock Spring Restorations, a leading provider of habitat restorations services in the Southeast. His company's clients include the U.S. Forest Service, the Georgia Department of Natural Resources, the City of Atlanta and several other large green-space owners/managers who hire them to improve habitat for wildlife. Rock Spring Restoration's services include: non-native invasive species control and eradication; native species propagation, installation and maintenance; ecotype seed collection and processing and habitat management consulting. Before starting Rock Spring ten years ago, Walter was in corporate banking for 15 years, specializing in leveraged lending, healthcare and technology finance.

CCA: Integrated Pest Management: .5 CEU

2:45 – 3:15
Room 140

Establishment and Management of Native Grasses (Using Plateau® as a Base Component)

James Bean, Strategic Accounts Manager
BASF Professional & Specialty Solutions
Cary, NC

Summary:
BASF has many years of experience in the establishment and management of native grass stands across the United States. Using Plateau herbicide as a base component, hundreds of thousands of acres of CRP, national and state parks, roadsides, solar farms and more have been successfully established and restored. This presentation will discuss lessons learned in this process that will ensure success.

Bio:
Jim Bean is a graduate of West Virginia University with a B.S. in Forest Resources Management. For the last 36 years Jim has worked in vegetation management, including nine years as a transmission forester for Appalachian Power Company and 27 years with BASF. Jim has held many positions with BASF including sales, sales management and marketing. Jim currently lives in Raleigh, NC.

As strategic accounts manager, Jim helps educate and serves customers in the forestry, rights-of-way, industrial bare ground, roadside, invasive weed and pasture/rangeland markets across the U.S.

CCA: Integrated Pest Management: .5 CEU

3:20 – 4:20 p.m.

Closing Plenary Session

East Ballroom

Converting a Former Superfund Site to Native Grasslands and Meadows

Calvin Ernst, Founder & President
Ernst Conservation Seeds
Meadville, PA

Summary:
Superfund sites can be challenging to revegetate. Some of the challenges presented are soil fertility (pH, organic matter, nutrient levels), site hydrology and weeds. This presentation will give attendees an opportunity to learn how Ernst Conservation Seeds turned a former brownfield site into a seed production field. Attendees will learn the challenges posed by the site at the outset and in the future and how they have been or will be addressed. Attendees will learn factors that present strong limitations to successful revegetation; how to address these limits to successful revegetation; learn challenges to maintaining desired vegetation and identify tools for doing so.

Bio:
Calvin Ernst received his B.S. degree in Agricultural Bioscience from Pennsylvania State University in 1963. He founded Ernst Crownvetch Farms in Meadville, Pennsylvania in 1964. What began as five acres of crownvetch grew to what is now approximately 10,000 acres of native grasses and wildflowers. As the customer base broadened, Ernst began specializing in custom mixes for wetland mitigation, restoration and wildlife habitat and soil bioengineering materials.

Ernst is a successful grower of approximately 400 native species of seeds and plants for commercial utilization in wetland restoration, meadow establishment, bioretention and wildlife habitat.

Calvin has received accolades from his peers throughout his career. He was chosen as the Agribusiness Leader of the Year by the National Agri-Marketing Association in 2018. He received the Atlantic Seed Association's 2015 Honorary Seedsman Award; the American Agriculturist Master Farmer award in 2008; the Governor Raymond P. Shafer Distinguished Service to the Community Award in 2007; Pheasants Forever Outstanding Support in 2006; the USDA-NRCS Plant Materials Program Special Service Award in 2004; Friend of French Creek Farmer/Landowner of the Year in 2004; Gannon University's Small Business Award in 1998 and Crawford County Council of Farm Organizations Ag-Industry Award for Outstanding Service to Crawford County Agriculture in 1995. In January of 2017, Calvin accepted a nomination to serve on the new Team PA Agriculture Advisory Board — a 25-member board consisting of executive leaders representing the breadth of Pennsylvania's agriculture sector and industries on which it depends.

LA CES: 1 CEU (satisfies HSW standard)

"The Shipwrecks of Lake Erie"

David Boughton, Maritime Education Specialist, Pennsylvania Sea Grant

Monday, September 17
5:30 – 7:00 p.m.
North Point Lobby/Exhibitor Area

According to an article originally published in the *Erie Times-News*, it's been estimated that the Great Lakes' floors are littered with the remains of more than 8,000 vessels. Of those, about 2,000 ships are estimated to have gone down in Lake Erie, the shallowest and deadliest of the Great Lakes. Only 132 of those Lake Erie shipwrecks have been documented and mapped. Dave Boughton, maritime education specialist for Pennsylvania Sea Grant, and many colleagues and collaborators have been on the ground (or lake) floor of this research.

"There's a great public interest, a great intrigue, in these shipwrecks," said Boughton in that newspaper interview.

Boughton will entertain us on Monday night with a lively presentation on the findings of this troupe of modern day explorers of the deep lakes. He'll share visual depictions of his findings, artifacts and stories only he could tell.

Boughton joined Pennsylvania Sea Grant in 2006 to facilitate the shipboard education program and has been full-time since 2009. He has coordinated a variety of educational programs including underwater robotics, College for Kids Presque Isle Summer Field Studies, and Robotics Workshops. He has also led the effort to develop the Lake Erie Science Project, Project Fly, Passport2Anywhere, and the Tall Ship program. Boughton has an undergraduate degree in Recreation and Park Management from Penn State University, a master's degree in Education from the College of Notre Dame, a Pennsylvania state teaching certification in secondary science and history, and thirteen years of classroom experience in K-12 education. He also has fifteen years federal experience in Recreation and Park Management and Environmental Education with the U.S. Navy and U.S. Park Service.

Music by Salmon Frank

Tuesday, September 18
7:00 – 9:00 p.m. (during dinner)
Anchor Plaza

Salmon Frank is a high energy, fun-oriented band that plays some of the finest venues in the NWPA, NE Ohio and SW NY region. With original and cover songs, the band is adaptable to the venue's needs ranging from quiet acoustic background to headlining concert environments. They'll provide us with an eclectic mix of genres, from Americana to rock, country to blues, with Sam Reese's vocals backed up by the drums, acoustic and electric guitars, an upright bass, banjo and maybe even the mandolin.

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