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ASSOCIATION

46TH ANNUAL  
NATURAL AREAS CONFERENCE

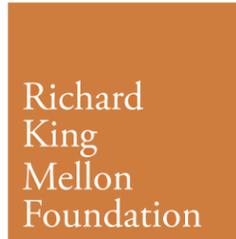
**At the Water's Edge:  
Managing Our Land and Water in a Changing Landscape**

Pittsburgh, Pennsylvania • October 7 - 10, 2019



Presented by the Natural Areas Association and our partners and co-hosts

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## Hello, and welcome to the 46th Natural Areas Conference.

I am pleased you could join us in Pittsburgh for this opportunity to meet in person, learn with each other, and also learn from each other. This is the land of water — a city shaped by the three rivers running through it — so it's a fitting location in which to address the theme of this year's conference and give water the attention it deserves. From a personal standpoint, I'm pleased to be able to share my home, the place where I got my start as a conservation professional, with all of you.

Water matters, whether for its quantity or quality (and depending on whether you live east or west of the Mississippi River, you generally care more about one or the other of those). Conservation professionals have always addressed the relationship between water and land. But sometimes, it seems as if we downplay water's role and focus on natural areas as purely terrestrial systems.

Water is an absolute indicator of how we're managing the land. If we're managing and stewarding the terrestrial system correctly, the proof will be in the water. But the ecological qualities of a natural area, both land and water, are always under threat.

Most of the conservation initiatives in this country fall short of the resources needed for much-needed long-term stewardship. In part, this is because it can be challenging to explain why stewardship is important, and why it takes a long-term investment to make it happen.

We can all be better communicators about conservation concepts like this, and the NAA can help. This organization exists to communicate, whether it's best practices, new research, or advocacy efforts. We communicate with our members, and we're committed to providing resources for your own communication efforts.

Fortunately, we're well-positioned to do this. We've had a good, productive year. The board has approved a strategic plan that will lay the path for the next three years. We are refining and solidifying initiatives already underway.

We also intend to grow our advocacy work to communicate the importance of our work to political decision-makers. We're primed to be a clear, strong voice on your behalf, while also empowering you to be your own voice.

It is a dream come true for me to have the conference here and to be able to showcase the amazing natural areas in Western Pennsylvania. Our planning committee members have been similarly inspired, and have poured countless hours into assembling a program of talks and symposia that offer training and applied learning opportunities for you. Thanks to their hard work and the support of our partners, this year's conference promises to be a meaningful experience for all. Enjoy your time and enjoy Pittsburgh, the land where three rivers meet!

Sincerely,

Lisa L. Smith  
Executive Director, Natural Areas Association

**We welcome you to Pittsburgh for this year's Natural Areas Association conference.** It's the first time that Pennsylvania has hosted the conference, and we hope that you will get a glimpse of its roots as part of the Rust Belt and the gateway to the west.

Pennsylvania sits at a geographic crossroads between the East Coast and Midwest and between glacial New England and the geologically older, warmer southeast. Roughly half the state drains into the Susquehanna and Delaware River basins and, ultimately, the Atlantic Ocean, while the other half drains through the Ohio River basin into the Mississippi River and Gulf of Mexico. The state is a contrast of landscapes, from the densely settled Piedmont and coastal plain (Philadelphia) of the southeast to the contiguously forested High Allegheny Plateau of northcentral Pennsylvania. Many species reach the edge of their ranges in or near Pennsylvania, and that may position the state to serve an important role in monitoring climate change effects.

This year's conference theme, *At the Water's Edge: Managing Our Land and Water in a Changing Landscape*, captures this confluence of cultural and biological heritage and offers the opportunity to gain insights into how natural resource professionals in this region deal with problems both unique and universal. Climate change and invasive species are perennial challenges, and the conference is bringing together experts and managers to help us all find some direction in our work as we confront these issues. We will look closely at assessing and managing natural communities from grasslands to glades and from riparian corridors to contiguous forest. We will also consider the challenges of working in and managing urban natural areas.

You will be spending your days in Pittsburgh at the Sheraton Hotel that sits along the Monongahela River. Walk across the historic Smithfield Bridge into our downtown and head to the point — the confluence of our three rivers — the Allegheny, the Monongahela, and the Ohio. This is also the location of Point State Park — the only state park in the state contained within a city. Pittsburgh is proud of its industrial heritage, but it's very different from what it was even 40 years ago. A huge number of cultural events, museums, and recreational opportunities, many within walking distance of the conference, show the evolution of this old steel town into a 21st century city. Another unique attribute of Pittsburgh is its compactness — 20 miles outside the city can put you in a very rural setting. The conference field workshops will take advantage of the many natural areas not far from the city. So whether you get on the Great Allegheny Passage bike trail that runs past the hotel and all the way to Washington, D.C., or paddle down the rivers, you will have a great chance to take in the city and region.

The conference will be jam-packed with excellent plenary talks, presentations and a great poster session. The people will be interesting, the city will beckon you across the river — perhaps all three rivers — to explore, and the early autumn air and colors will make for memorable field workshops and travel around the region.

On behalf of the conference planning team, we thank you for attending, our supporters for their generosity, and the Natural Areas Association for its commitment to these conferences and the sharing of ideas. Enjoy!

Sincerely,  
The Conference Planning Team

## Exhibitors

### Ballroom 1

*We want to thank this year's exhibitors. Please stop by anytime during the conference and pay them a visit.*

Bureau of Land Management  
Carnegie Museum of Natural History —  
Powdermill Nature Reserve  
Dendroyka LLC  
Ecological Field Services  
Ernst Conservation Seeds  
Meadville Land Service, Inc.  
Oak Woodlands & Forests Fire Consortium  
Patagonia  
Pennsylvania Department of Conservation and Natural Resources  
Pennsylvania Natural Heritage Program  
Truax Company  
USDA Forest Service  
Utility Arborist Association  
Woody Warehouse Nursery, Inc.

## Questions and Conference Updates

The NAA staff at the conference registration desk will be happy to answer any questions you have. We will post any last-minute updates to the conference schedule and other important information there as well.

## Name Badges

Please wear your name badge to all conference events. It is your ticket to sessions, workshops, breaks, and social events.

## Cell Phones

Please silence cell phones during sessions as a courtesy to presenters and participants.

## Get Social

Please use #NACPittsburgh on social media related to the conference.

## Breaks

All breaks with refreshments will take place in the ballroom behind registration.

## Visit Our Exhibitors

Exhibitors will be in the ballroom behind registration on Tuesday, 11 am to 8 pm, and Wednesday, 10 am to 4 pm.

## Field Workshops

All field workshops depart on Thursday morning from the main entrance of the Sheraton between 7 am and 9 am. Check your registration for details regarding your departure time. No onsite changes can be made to field workshops.

## Student Competition

Thank you to all who participated. A team of judges will evaluate student posters and oral presentations. The top student presenters will receive their awards on Wednesday night at the awards dinner. Students must be present at the dinner to receive their awards.

## WiFi Access

WiFi is available throughout the Sheraton. The hotel front desk staff can help you with connectivity issues.



## Job Outreach

Look for the **We're Hiring** signs in the exhibit area and post and seek jobs on our job board.



SUZIE SEMROC

# Information

**Schedule at a Glance / Venue Map**

**Monday, Oct. 7**

8 am - 4 pm Lobby  
**Registration Open**

9 am - 12 pm Woodlawn and Haselton  
**Morning Workshops**

1 - 4 pm Woodlawn and Haselton  
**Afternoon Workshops**

**Tuesday, Oct. 8**

7:30 am - 8 pm Ballroom 1  
**Exhibit Hall Open**

7:30 am - 5 pm Lobby  
**Registration Open**

8:30 - 11:30 am Ballroom 5  
**Opening Plenary**

11:30 am - 1 pm Reflections Room  
**Student Mentoring Luncheon**

1 - 2:30 pm Woodlawn, Haselton, Fountainview, Elwood, Stoops Ferry, Edenburg  
**Concurrent Sessions**

2:30 - 3 pm Ballroom 1  
**Break**

3 - 4:30 pm Woodlawn, Haselton, Fountainview, Elwood, Stoops Ferry, Edenburg  
**Concurrent Sessions**

4:30 - 6 pm Stoops Ferry  
**Roundtable: State Natural Area Programs**

4:30 - 6 pm Woodlawn  
**Roundtable: Climate Planning for Pennsylvania and the Region**

6 - 8 pm Ballroom 1  
**Poster Reception**

**Wednesday, Oct. 9**

7:30 am - 6 pm Ballroom 1  
**Exhibit Hall Open**

7:30 am - 12 pm Lobby  
**Registration Open**

8:30 - 10 am Woodlawn, Haselton, Fountainview, Elwood, Stoops Ferry, Edenburg  
**Concurrent Sessions**

10 - 11 am Ballroom 1  
**Coffee With Exhibitors**

11 - 12:30 pm Woodlawn, Haselton, Fountainview, Elwood, Stoops Ferry, Edenburg  
**Concurrent Sessions**

12:30 - 2 pm Reflections Room  
**NAA Members Meeting and Luncheon**

2 - 3:30 pm Woodlawn, Haselton, Fountainview, Elwood, Stoops Ferry, Edenburg  
**Concurrent Sessions**

3:30 - 4 pm Ballroom 1  
**Break**

4 - 5:30 pm Ballroom 5  
**Closing Plenary**

6 - 9 pm Reflections Room  
**Awards Dinner**

**Thursday, Oct. 10**

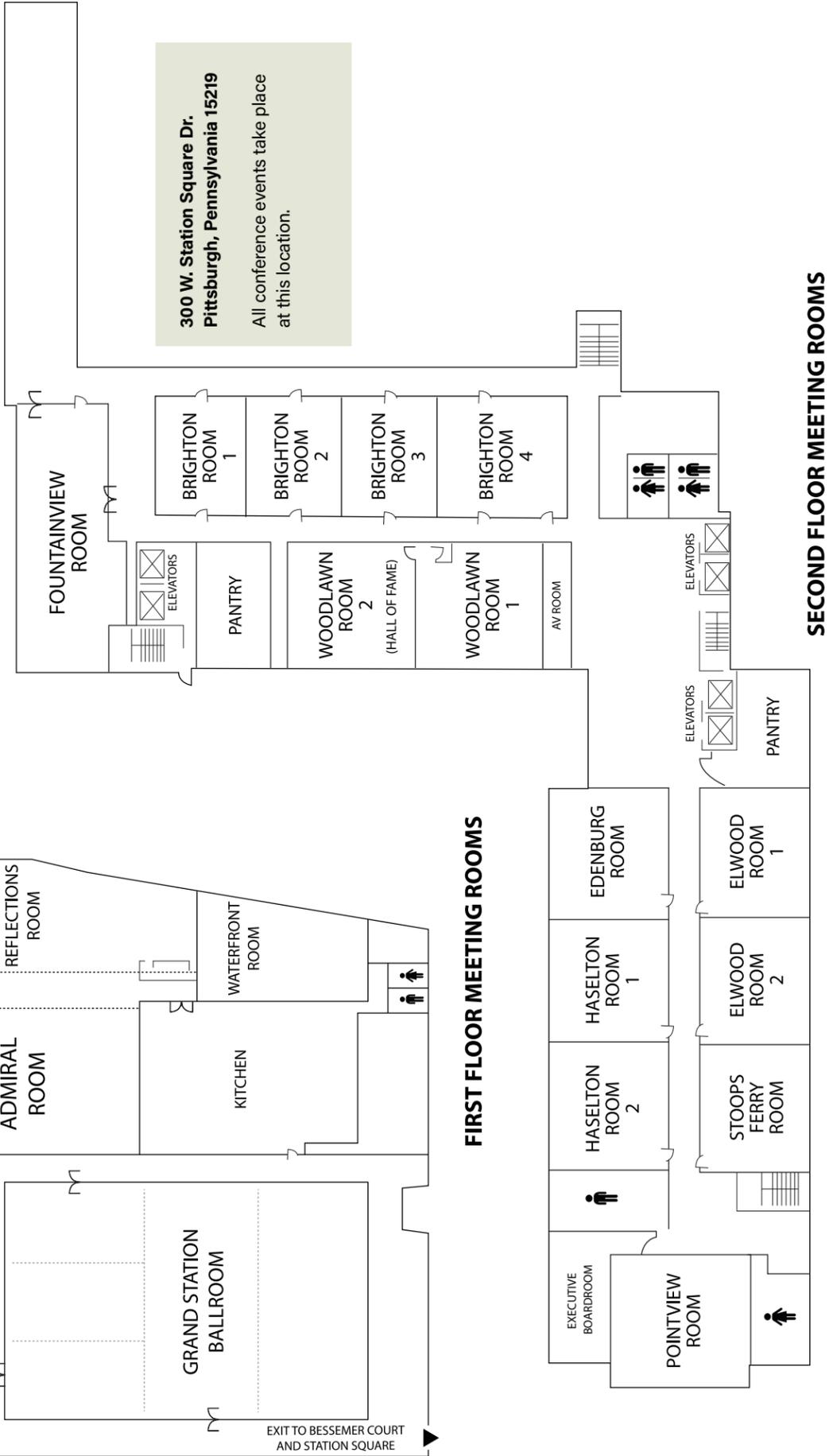
7 - 9 am Main entrance of the Sheraton  
**Field Workshop Departure**

Information

PITTSBURGH, PENNSYLVANIA



**Sheraton  
 Station Square  
 HOTEL  
 PITTSBURGH**



## Pre-Conference Workshops

### 9 am – noon **Dendrochronology: Understanding Long-term Forest Change with Tree-rings**

**INSTRUCTORS:** **Dr. Michael Stambaugh**, *associate research professor, U. of Missouri* and **Joseph Marschall**, *senior research specialist, U. of Missouri*

The purpose of this workshop is to provide an introduction to the science of dendrochronology, with an emphasis on forest change and fire history. We will show field sample collection and laboratory techniques, and provide instruction on the method of crossdating. We will also share recent research on the ecology of fire-adapted red pine and pitch pine ecosystems in Pennsylvania. Additionally, we will discuss the broader context of the history of fire in Eastern U.S. ecosystems. Attendees will learn how tree-ring investigations are conducted and become aware of recent developments in understanding forest changes and fire research in Pennsylvania and beyond.

### 9 am – noon **Grass Identification: Lemmas and Ligules and Glumes, Oh My!**

**INSTRUCTOR:** **Dr. Timothy A. Block**, *the John J. Willaman Chair of Botany at the University of Pennsylvania's Morris Arboretum*

The grass family (Poaceae) is the fifth-largest plant family in terms of species (about 12,000), and the most important family in terms of food production worldwide. Grasses occur on every continent (including Antarctica!) and are important biological components of most ecosystems. Many people, even plant enthusiasts, often avoid grass identification because they are "just too hard" or "they all look alike." This workshop will help dispel both of those mistaken ideas. We will start with how to distinguish grasses from other "graminoids" such as rushes and sedges, then move on to cover the unique terminology associated with grass parts, concentrating on where to look for those structures you need to examine to come to a correct species identification. Also, we will cover a number of commonly misidentified grasses, providing specifics of easy to see (once you know what to look for), but often overlooked details that can be sources of confusion. Lots of plant material will be provided for you to examine, learn from, and generally get comfortable with.



Halictid bee PHOTO BY JUDY SEMROC

### 1 – 4 pm **Common Bees of Pennsylvania: Identification and Natural History**

**INSTRUCTORS:** **Michael Skvarla**, *director, Insect Identification Laboratory, and extension educator, Penn State University* and **David Biddinger**, *Ph.D., professor of entomology, Penn State University*

Participants will learn how to identify bees that are commonly encountered in Pennsylvania. We will also discuss the natural history of native bees and how that is related to identification and, if time permits, conservation. No previous experience with bee or insect identification is required. Our instructors are experts in insect identification and Integrated Pest and Pollinator Management (IPPM), which promotes pollinator conservation in the production of many specialty crops. Their efforts are focused in part on evaluating possible pollinator decline and determining if mitigation/conservation tactics are effective.

### 1 – 4 pm **Pennsylvania's "Big River" Mussels Identification: Ohio, Allegheny, and Monongahela**

**INSTRUCTOR:** **Nevin Welte**, *malacologist/nongame biologist, Pennsylvania Fish & Boat Commission*

Looking to learn more about the amazing life of freshwater mussels? Do you want to impress your neighbors by knowing and explaining the difference between a Mucket and a Pink Mucket? Please join me for a deep dive into "big river" mussel ecology and species identification. This short workshop will introduce and cover the current and historical fauna of the Ohio, Allegheny, and Monongahela rivers and provide you with tips and tricks on how to identify them.

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## Opening Plenary

8:30 – 11:30 am Ballroom 5

The Opening Plenary introduces the theme of our conference, *At the Water's Edge: Managing Our Land and Water in a Changing Landscape*, through the perspectives of our four guest speakers. Gather with your colleagues and listen to inspiring stories of land and water, ecological communities, human-nature connections, and exemplary conservation work in Pennsylvania and beyond. Cindy Dunn will describe Pennsylvania's network of natural areas and the young people who are getting outside and working to continue conservation and environmental stewardship. By sharing her story and vision for conservation, Dr. Mamie Parker will explain how we can continue to confront challenges and build support for natural areas. Charles Bier will take us on a tour of the watersheds and ecoregions of Pennsylvania and the conservation history of the state. In this year's opening keynote address, Mark Anderson will highlight the challenge of coordinating conservation efforts, including natural areas protection and management, to achieve sustainable biodiversity preservation and climate change resilience at a national scale.

**8:30 am Opening Remarks:** Lisa Smith, Executive Director, Natural Areas Association

**8:40 am Welcome:** Jeff Wagner, Conference Chair

### PLENARY ADDRESSES

#### 8:45 am **Positioning Pennsylvania's Public Lands to Address Emerging Issues** by Cindy Adams Dunn

The Pennsylvania Department of Conservation and Natural Resources manages 2.5 million acres of state parks and forests. The department's core work includes managing state forests and parks under an ecosystem management approach to retain their wild character and maintain biological diversity while providing pure water, habitats for forest plants and animals, opportunities for recreation, and sustained yields of quality timber. Combined, our state forests and parks boast almost 250,000 acres of natural areas and wild areas, lands set aside to protect some of the state's most rare and unusual species, natural communities, geologic, scenic, and historic features. Dunn discusses how Pennsylvania natural areas are critical habitats that often function as

refuges and corridors for wildlife in a changing climate. She addresses the links between land management, conservation, and water, and how critical it is to connect young people to the outdoors and to solving environmental problems.

#### 9:10 am **Our Core and Our Code: Radical Collaboration and Transformational Actions in the Natural Areas Community** by Dr. Mamie Parker

Dr. Mamie Parker shares her views on the importance of maintaining our current core and code while moving to radical collaboration and transformational actions related to natural areas. She discusses opportunities to enhance land protection, including innovative solutions to clean water use and adaptable strategies related to species protection and habitat management in the age of energy development, invasive species, and more storms, droughts, flooding, and fires. Parker uses storytelling to share her journey and life lessons from the Mississippi River delta lands to the Chesapeake Bay watershed, inspiring the audience to take personal, courageous actions to address climate change and other challenges by building stronger bridges to engage nontraditional partners and multiple generations.

#### 9:50 am **Landscapes and Biodiversity of Penn's Woods** by Charles W. Bier

Pennsylvania was dubbed "Penn's Woods" early on, and it is also known as the "Keystone State" for its important role in the mid-Atlantic region. Spanning from the Ohio River to the Delaware, from Lake Erie sand dunes to the shale and serpentine barrens of the southern counties, the keystone includes enough biodiversity to keep any naturalist and conservationist busy for a few lifetimes. Using watersheds and ecoregions as approaches, this introduction provides an overview of our biogeography, flora, fauna and range of habitats, along with a few sidebars on land use history and a few of the key early natural historians who studied the region. In addition to an overview of biodiversity, Pennsylvania's globally significant role in conservation will be presented.

**10:25 am Break**

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Monday, Oct. 7

PITTSBURGH, PENNSYLVANIA

2019 NATURAL AREAS CONFERENCE

Tuesday, Oct. 8

**KEYNOTE ADDRESS**

**10:45 am Resilient and Connected Landscapes to Sustain Nature's Diversity Under Climate Change by Dr. Mark Anderson**

Natural areas are critical for sustaining biodiversity and ecological services under climate change, but how do we ensure that our network of secured areas will collectively sustain the full spectrum of nature's diversity and services while allowing for adaptation and movement? Over the last decade, The Nature Conservancy, in collaboration with over 100 scientists, has developed an approach to identifying and mapping a network for the U.S. that is specifically designed to sustain biodiversity under a changing climate. The criteria require sites to be 1) individually resilient, 2) collectively representative of all geophysical environments, 3) configured to facilitate range shifts, and 4) stocked with thousands of high-quality natural communities and rare species populations. These concepts play out differently in different regions of the U.S., and we will look at examples of the resulting network from across the country. In the Eastern U.S., the results prioritized a connected network that covers 23% of the region and contains 80,000 confirmed biodiversity elements and multiple resilient examples of all 61 geophysical settings. The eastern network also accounts for 56% of the aboveground carbon and 75% of the high-value water supply land, produces 1.8 billion tons of oxygen annually, and mitigates 1.3 tons of air pollution. The approach highlights the question: Can we collectively coordinate our conservation efforts to have a greater impact and sustain diversity at a national scale?

**Student Networking Luncheon: Passing the Drip Torch**

**11:30 am - 1 pm Reflections Room**

Students and young professionals can chat with seasoned professionals about a variety of conservation careers. Lunch will be provided for those who indicated they would be attending when they registered for the conference.

Tuesday, Oct. 8

**ABOUT THE SPEAKERS**



**Dr. Mark Anderson**  
*Director of Conservation Science: Eastern U.S., The Nature Conservancy*

Mark Anderson provides science leadership, ecological analysis, and landscape assessments for conservation efforts across 22 states in the Eastern United States. He holds a Ph.D. in ecology from University of New Hampshire and has worked as an ecologist for over 30 years, 26 with The Conservancy. He has published widely on climate change resilience, large landscape conservation, biodiversity, and forest dynamics. A co-author of the National Vegetation Classification, his current research interests focus on the intersection between ecological services, biodiversity, and geophysical properties. He manages a team of six scientists specializing in landscape ecology, aquatic biology, marine spatial planning, and regional data management. In 2017, Mark received The Nature Conservancy's Conservation Achievement award.



**Cindy Adams Dunn**  
*Secretary, Pennsylvania Department of Conservation and Natural Resources*

Cindy Adams Dunn is the sixth secretary of Pennsylvania's Department of Conservation and Natural Resources. At DCNR, she has helped position the state as a leader in land conservation, outdoor recreation, green practices and public land management. During her tenure the department created the Pennsylvania Outdoor Corps to connect youth and young adults with job opportunities relating to the outdoors and the environment. Under her direction, Pennsylvania continues efforts to address the impacts of climate change, as well as providing leadership on planting forest buffers along streams to improve water quality. Dunn has worked in both the public and private sectors. She is trained as a biologist.



**Dr. Mamie Parker**  
*Chair, Virginia Game and Inland Fisheries Commission, and Former Head of Fisheries at U.S. Fish and Wildlife Service*

Mamie Parker worked for almost 30 years at the U.S. Fish and Wildlife Service as a fisheries biologist and then as one of the agency's assistant directors, managing a \$250 million budget, 2,400 employees, 300 field stations and overseeing the agency's fisheries and habitat conservation program. She was the agency's first African American regional director in New England and the first professional African American woman to hold a position in the agency's headquarters offices in Washington, DC. A pioneer in her field, Parker is renowned for sharing her story and her visions for the future of conservation with audiences across the country.



**Charles W. Bier**  
*Senior Director, Conservation Science, Western Pennsylvania Conservancy*

Charles Bier is a western Pennsylvania native. He studied ecology at the University of Wisconsin and has broad experience in regional flora, fauna, ecosystems, and conservation issues. Much of his focus has been on rare and endangered species, natural communities, and biodiversity conservation. Since 1981 he has worked for Western Pennsylvania Conservancy, first as part of the Pennsylvania Natural Heritage Program and now broadly providing science support across programs. He is a research associate at the Carnegie Museum of Natural History in the Section of Invertebrate Zoology and serves on several state committees, including the Governor's Invasive Species Council, DCNR's Ecosystem Management Advisory Committee, and technical committees of the Pennsylvania Biological Survey.

Tuesday, Oct. 8

# Oral Sessions & Symposia 1 - 4:30 pm

Room	Woodlawn	Haselton	Fountainview	Elwood 1	Elwood 2	Stoops Ferry	Edenburg
Topic	SYMPOSIUM Protecting and Managing Conservation Lands and Waters for Climate Resilience	SYMPOSIUM Communication and Management of Emerging Forest Pests and Pathogens	SYMPOSIUM Managing Urban Natural Areas: Finding Practical Solutions to Complex Problems	SYMPOSIUM Partnerships in Nature and How Energy Corridors Can Help	SYMPOSIUM The Importance of Genetics to Restoring Species of Special Interest in Appalachian Ecosystems — Data and Tech	SYMPOSIUM Assessing the Ecological Integrity of Natural Areas: from Site to Regional Climate Scales	Native Plant Conservation Initiatives
Moderator	Elizabeth Johnson	Constance Hausman	Anna Johnson	Anand Persad and Jack McCabe	John Carlson	Don Faber-Langendoen	Deborah Landau
1:00 pm	<b>Jean Lorber:</b> Examining Restoration Goals in the Context of Climate Change: A Case Study from the George Washington-Jefferson National Forest	<b>William Oldland:</b> How to Respond when Dealing with Emerging Pests or Pathogens	<b>Jordan R. Fischbach:</b> Evaluating the Flood Risk and Climate Resilience Benefits from Green Infrastructure in Key Pittsburgh Watersheds	<b>Phil Charlton:</b> Green Space ROW Management, Environmental Stewardship and Partnerships	<b>John Carlson:</b> The Importance of Genetics to Restoring Species of Special Interest in Appalachian Ecosystems	<b>Justin Schlawin:</b> Evaluating Maine's Floodplain Forests Using Ecological Integrity Assessment Methodology	<b>Heather McCargo:</b> Grassroots Seed Propagation of New England Native Plants
1:30 pm	<b>Meredith Malone and Roy Brubaker:</b> Implementing the DCNR Climate Change Adaptation & Mitigation Plan with Examples from the South Mountain Landscape of Southcentral Pennsylvania	<b>Kathy Smith:</b> Outreach and Communication to Private Landowners	<b>Leslie Brandt:</b> Adapting Urban Natural Areas to Climate Change	<b>Stan Vera-Art:</b> Pollinator Health and Managing for Sustainability in Utility Corridors	<b>Krystle Swartz:</b> Genetic Diversity in the Rare Parasitic Tree Buffalo Nut	<b>Kathleen Strakosch Walz:</b> New Jersey's Wetland Condition Assessment Intensification Study: A Multi-Tiered Assessment of Wetlands and Watersheds	<b>Jennifer Ogle:</b> The Arkansas Native Seed Program: An Initiative to Develop a Native Seed Industry with Locally Sourced Plant Materials
2:00 pm	<b>Elizabeth Johnson:</b> Conserving a Critical Climate Corridor on the Kittatinny Ridge	<b>Daniel R. Volk:</b> Beech Leaf Disease: an Undiagnosed Threat to Beech Forests	<b>Camila Rivera-Tinsley:</b> Engaging Diverse Communities with Urban Nature	<b>Anand Persad:</b> Case Studies of Natural Areas Intersecting Utility Energy Corridors	<b>T. Casey Weathers:</b> Conservation Genetics of Native Brook Trout in the Great Smoky Mountains National Park	<b>Theo Witsell:</b> Development and Application of Ecological Integrity Assessment (EIA) Protocols in Arkansas	<b>Deborah Landau:</b> Successes (and Failures) of <i>Oxyptalis canbyi</i> Restoration in a Delmarva Bay
2:30 pm	BREAK	BREAK	BREAK	BREAK	BREAK	BREAK	BREAK
Topic	(continued)	(continued)	(continued)	(continued)	(continued)	(continued)	Management Planning to Advance the Conservation of Special Species/Natural Communities
Moderator							Roger McCoy
3:00 pm	<b>Brad Maurer and Rose Reilly:</b> Evaluating the Management of Dams under a Changing Climate: Case Studies on the Upper Allegheny River	<b>Michael Hutchinson:</b> Spotted Lanternfly: What We Have Learned/How We Respond	<b>Clare Maffei:</b> Baltimore Biodiversity Toolkit: Focused Plans for Urban Wildlife	<b>Greg Dahle:</b> Restoration of Native Trees in Rights of Ways: Community Partnerships	<b>Tatyana Zhebentyayeva and Sara Fitzsimmons:</b> Restoration of the American Chestnut	<b>Don Faber-Langendoen:</b> Assessing the Ecological Integrity of Natural Areas: From Site to Regional Climate Scales	<b>Anna Braum:</b> Restoration of Rare Seep Habitat in the Illinois River Floodplain
3:30 pm	<b>Ben Rhodes:</b> Landscape-Scale Restoration on the Monongahela National Forest	<b>Jonathan M. Shields:</b> Asian Longhorned Beetle (ALB) Cooperative Eradication Program Efforts in Southwest Ohio	<b>Clara Pregitzer and Sarah Charlop-Powers:</b> Untapped Common Ground: The Care of Forested Natural Areas in American Cities	<b>Dave Bieneman:</b> Case Studies of Mitigating Opportunistic Vegetation and Woodlots On and Off Energy Corridors		<b>Mike Leahy:</b> Rapid Assessment and Monitoring of the Ecological Integrity of Terrestrial Natural Communities: A Missouri Case Study	<b>Don Ruch:</b> Analysis of Results of Prescribed Burning on Species Composition in Five Community Types at Cabin Creek Raised Bog, Randolph County, Indiana
4:00 pm	Discussion	Discussion	<b>Anna Johnson:</b> Managing Urban Natural Areas: Finding Practical Solutions to Complex Problems	Discussion		Discussion	<b>Roger McCoy:</b> Current Research and Conservation Action for the Federally Threatened White Fringeless Orchid ( <i>Platanthera integrilabia</i> )
4:30 pm	ADJOURN	ADJOURN	ADJOURN	ADJOURN	ADJOURN	ADJOURN	ADJOURN

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## 1 - 4:30 pm Partnerships in Nature and How Energy Corridors Can Help (Elwood 1)

Join The Davey Institute and the Utility Arborist Association to take a look at the future of energy corridors, including new approaches, ecological research results, and case studies. Managing corridors for ecological benefits along with energy regulation compliance can restore native plants, support wildlife, create suburban havens for pollinators, and protect biodiversity.

## 1 - 4:30 pm Protecting and Managing Conservation Lands and Waters for Climate Resilience (Woodlawn)

Explore how you can prepare for and manage climate change-driven impacts on a large scale with The Nature Conservancy. Experts will share plans for protecting and

enhancing the resilience of conserved land and water within George Washington-Jefferson and Monongahela National Forests, Pennsylvania's Kittatinny Ridge corridor, the Upper Allegheny River, and Pennsylvania state parks and forest lands.

## 1 - 4:30 pm Assessing the Ecological Integrity of Natural Areas: From Site to Regional Climate Scales (Stoops Ferry)

Are you grappling with multiple factors influencing the quality and value of your natural area? NatureServe's Ecological Integrity Assessment (EIA) is a tool for evaluating ecosystem conditions and understanding what drives ecosystem function. Explore applications of EIA from Maine forests, New Jersey wetlands, Arkansas uplands, and the National Capital Region National Parks.

## 1 - 4:30 pm The Importance of Genetics to Restoring Species of Special Interest in Appalachian Ecosystems (Elwood 2)

Learn about recent genetic research and discuss implications for managing native trees susceptible to invasive pests and pathogens. Hear the story of buffalo nut, a rare tree vulnerable to range shifts due to climate change. See new research on genetics and management of native brook trout populations divided by natural and man-made barriers.

## 1 - 4:30 pm Managing Urban Natural Areas — Finding Practical Solutions to Complex Problems (Fountainview)

Hear about trends in urban natural areas gathered from 111 cities across the United States. Learn how to assess vulnerabilities and adapt management of

urban natural areas and green infrastructure to climate change impacts. Hear about programs that are engaging residents and policymakers in protecting urban wildlife habitat in Baltimore and developing cultural competency in Pittsburgh.

## 1 - 4:30 pm Communication and Management of Emerging Forest Pests and Pathogens (Haselton)

When a new pest or pathogen shows up, communication, funding, strategic monitoring, and effective management are critical to gaining the upper hand. Join regional forest health experts to discuss how local, state, federal, and private organizations share information and determine management protocols for new threats.

## Roundtable: Climate Planning for Pennsylvania and the Region

4:30 - 6 pm Woodlawn

Join the Opening Plenary speakers and your peers in an informal setting for a conversation about various approaches, perspectives, and practices regarding the protection and management of natural areas in a changing climate, focusing on Pennsylvania and the region. Light appetizers will be provided.

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Tuesday, Oct. 8

PITTSBURGH, PENNSYLVANIA

2019 NATURAL AREAS CONFERENCE

Tuesday, Oct. 8

## Poster Session & Reception

6 - 8 pm Ballroom 1

Join us for the first networking event of the Natural Areas Conference. All are invited to talk with our poster presenters, socialize with new and old friends, and enjoy complimentary hors d'oeuvres and a beverage from the cash bar.

- GPS Telemetry Collar for Neotropical Species, White-Lipped Peccaries **Xavier Abdullahi**
- Land Trusts and Birds: Partners in Strategic Conservation **Sara Barker Swarthout**
- Prescriptive Goat Grazing & Prescribed Fire as a Means to Halt Mesophication and Promote Biodiversity in Ozark Hardwoods **Gina Beebe**

- A Failure to Thrive: How Abundant Deer and Acid Deposition may be Changing Forest Plant and Soil Communities. **David Burke**
- Acoustical Monitoring of Overflight Noise on the South Rim at Grand Canyon National Park **Hannah Chambless**
- Effect of Herbicide Type, Herbicide Concentration and Timing of Application on Control of Lesser Celandine **Kendra Cipollini**
- Prioritizing Protection and Recovery Efforts using Statewide Conservation Targets **Mei-Ling Feng**
- Habitat Suitability Modeling of Culturally Important Plants at Wind Cave National Park in South Dakota **Elizabeth Green**
- Oak Savanna Vegetation Diversity and Carbon Sequestration: Implications for Management Practices **Jeff Heise**
- The Vascular Flora of the Boone Fork Headwaters Within Grandfather Mountain State Park, North Carolina **Ethan Hughes**
- Comparing the Efficacy of Management Strategies for a Natural Green Ash Tree Population Using Modeling **Rachel Kappler**
- Promoting Pollinators at the Flight 93 National Memorial **Andrea Kautz**
- Stabilizing Abandoned Coal Mine Waste: Is Little Bluestem the Answer? **Jason Kilgore**
- The Legacy of Agricultural Land Use Can Have a Long-Term Impact on Soil Biota Following Reforestation. **Sarah Kyker**

- Drone Imagery and Vegetation Mapping of Piping Plover (*Charadrius melodus*) Habitat at John Williams Nature Preserve **Nathan Bennett**
- The Mighty Red Spruce: Using UAVs to Help Manage Recovering Populations **Katie Biggert**
- Dendroecological Analysis of Xeric, Upland, *Quercus*-Dominated Old-Growth Forest Within the Ridge and Valley Province MD **Sunshine Brosi**

Piping Plover PHOTO BY JUDY SEMROC

Tuesday, Oct. 8

PITTSBURGH, PENNSYLVANIA

## Heritage Network Gathering

8 pm Location to be determined

Immediately following the Poster Session, meet in hotel lobby to walk to a social gathering.

- Cancer-Root: A Two-Year Population Ecology Study at Blossom Hollow Nature Preserve in Central Indiana **Bradly Wehus-Tow**
- U.S. Army Corps of Engineers Invasive Species Traveling Trunk **Tara Whitsel**
- Intercontinental Convergence Between Floristic Quality Assessment and Analog European Indicator Systems **Jack Zinnen**

- Long Term Monitoring of Riparian Restoration Projects in New York State **Colleen Lutz**
- Effects of Winter Applications of Indaziflam upon Pre-Emergence Control of Japanese Stiltgrass in a State Park **Victor Maddox**
- Spatial Variation in Historical Fire-Regime Characteristics of an Oak-Pine Landscape, Pennsylvania, USA **Joseph Marschall**
- Contrasting Patterns of Ground Spider and Beetle Activity Across a Japanese Knotweed Dominated Riparian Buffer **David Matlaga**
- Plant Communities of the South Fourche Botanical Area in Arkansas **Virginia McDaniel**
- Assessing the Conservation Status of *Baptisia australis* var. *australis* in Pennsylvania Through Natural History and Metap **Cheyenne Moore**
- Place Meaning and Place Attachment Ascribed to Appalachian Geopark: A Case Study in West Virginia State, USA **Ganga Nakarmi**
- What's Happening in the Understory? A Prelude to Forest Future Without White Ash **Dawilton Nelson**
- Lithologic Influences on Forest Carbon Storage, Uptake and Community Composition of Forests in the Ridge and Valley, PA **Warren Reed**
- A Geologic Study of Piping Plover (*Charadrius melodus*) Habitat Loss at John E. William's Nature Preserve **Henry Saarinen**
- Quantifying Soil Erosion at an Abandoned Coal Mine Waste Site **Nathaniel Shaffer**
- Social Value of Forests and Birds in Pennsylvania **Sadikshya Sharma**
- Priority Effects Leave Restorations Susceptible to Invasion, but only in Heavily Invaded Sites **Katharine Stuble**

2019 NATURAL AREAS CONFERENCE

Tuesday, Oct. 8

# Oral Sessions & Symposia

8:30 am – 3:30 pm

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15

Room	Woodlawn	Haselton	Fountainview	Elwood 1	Elwood 2	Stoops Ferry	Edenburg
Topic	SYMPOSIUM Flexible Tools to Increase the Effectiveness and Scale of Land Conservation for Environmental and Climate Resilience	Riparian Community/Plant Conservation	Using Data and Technology to Advance Conservation	Monitoring Conservation Initiatives	SYMPOSIUM Integrating Education into Conservation Planning to Foster Stewardship	Identifying Natural Areas for Conservation	Restoration of Natural Areas Qualities (Prairies)
Moderator	Matt Freeman	Theo Witsell	Regan Lyons	Matthew Sarver	Danielle Forchette	Esther Stroh	Roger Latham
8:30 am	<b>Tom Robinson:</b> Increasing the Pace and Scale of Conservation Action in the San Francisco Bay Area Through the Conservation Lands Network	<b>Stephanie Perles:</b> Protecting Rare Riparian Prairies Using Science-Based Management	<b>Regan Lyons:</b> A National Map of Biodiversity Irreplaceability to Guide Conservation Investment	<b>Kathleen Walz:</b> Hydrology Monitoring: Methods and Applications in a Changing Landscape	<b>Marijke Hecht:</b> Connecting Research & Practice: Exploring Naturalist Learning Pathways	<b>John Wenzel:</b> Program to Characterize Biodiversity at a Global Level in Selected Representative Sites	<b>Rebecca Swab:</b> Prairie Puzzles: Plants, Pedosphere, Pollinators, Passerines
9:00 am	<b>Nicole E. Heller:</b> Adapting Conservation Tools and Approaches to Account for Climate Change	<b>Theo Witsell:</b> Mapping and Inventory of Riverscours Communities in Arkansas	<b>Crystal Krause:</b> Field Validation of Species Distribution Models for On-the Ground Management: A Case Study of WV Federally Listed Plants	<b>Matthew Sarver:</b> "Every Cog and Wheel": The Importance of Multi-taxa Baseline Inventory in Management and Restoration Planning	<b>Tajji Nelson and Nyjah Cephas:</b> Relevant, Engaging and Reciprocal: Fostering a Diverse Learning Community Through Meaningful Work	<b>Charles Cole:</b> Design Approaches to Preserve a University-Owned Natural Area: The Musser Gap to Valleylands (MG2V) Project at Penn State	<b>Keri Plevniak:</b> Functional Diversity of Restored Meadows
9:30 am	<b>Adam Garcia:</b> Promoting Awareness of the Threat of Development and Opportunities for Regional Open Space Protection Through Policy Analysis Mapping	<b>Steve Grund:</b> As Marshallia Goes, So Goes the Scour Habitat? Lessons from the Youghiohgheny River Gorge	<b>Summers Cleary:</b> GIS and Field-based Methods Modeling the Distribution of the Worm-eating Warbler ( <i>Helmitheros vermivorum</i> )	<b>Autumn Sabo:</b> Monitoring the Effects of White-tailed Deer and Promoting Restoration of Forest Plant Communities	<b>Becky Thomas:</b> Learning By Doing: Preparing University Students for the Research-Implementation Space in Natural Resource Management	<b>Dustin Lynch:</b> The Devil and the Deep Blue Lake: Natural Area Acquisition and Stewardship Protect a Major Arkansas Drinking Reservoir	<b>Peter Dunwiddie:</b> What Do We Do When Restoration is No Longer an Option?
10:00 am	BREAK	BREAK	BREAK	BREAK	BREAK	BREAK	BREAK
Topic	(continued)	(continued)	(continued)	Invasive Species Management and Prevention	(continued)	Management Planning to Advance the Conservation of Special Species/Natural Communities	(continued)
Moderator		Steve Grund	Christopher Tracey	Erynn Maynard-Bean		Scott Bearer	
11:00 am	<b>Elizabeth O'Donoghue:</b> Where the Rubber Meets the Road: Meeting the Conservation Data Needs of Land Use and Transportation Planners Through a Regional Greenprint	<b>Julie Lundgren:</b> Awash in Water and People: Challenges of Conserving Beach and Dune Ecosystems in NY State Parks	<b>Christopher Tracey:</b> Conservation and Management of Rare Wetland Butterflies: Strategies for Modeling and Habitat Enhancement	<b>Arthur Gover:</b> So Many Weeds, So Little Time: Evaluating Sites and Species to Prioritize Invasive Species Work in PA State Parks	<b>Jennifer Layman:</b> Transforming Lands and Lives: Diversity, Equity, and Inclusion in Conservation	<b>Ron Rohrbaugh:</b> Ecosystem Engineers: Shaping Healthy Forests in the Face of Multiple Stressors	<b>Tyler Bassett:</b> Learning to Say Goodbye to Michigan's Rare Prairie Flora
11:15 am				<b>Allison Koehle:</b> Hemlock Woolly Adelgid and Headwater Stream Biodiversity: No Evidence for Significant Short-term Impacts			
11:30 am	<b>Matt Freeman:</b> From Greenprint to Greenbelt: Translating Conservation Science into Policy and Partnerships to Conserve the Coyote Valley	<b>Safra Altman:</b> ACOENatural and Nature-Based Features for Reservoir Shoreline Management	<b>Cathy Haffner, Diana Day, Chris Tracey:</b> Pennsylvania Wildlife Action Plan Conservation Opportunity Area Tool	<b>Sara Crayton:</b> Stream Salamander Community Responses and Sublethal Impacts of Imidacloprid Exposure	<b>Adam Schmutte:</b> Helping People and Nature Thrive: Education and Engagement as a Habitat Restoration Tool	<b>Scott Bearer:</b> Managing Dynamic Forest Restoration Blocks for Climate Resilience and Long-term Habitat Health	<b>Will Ryan:</b> Investigating Geodaphic Meadows, Glades, and Grasslands in Southeastern Pennsylvania
11:45 am				<b>Erynn Maynard-Bean:</b> Shedding Light on Invasive Shrubs in Eastern Deciduous Forests of North America			
noon	Discussion	<b>Emily Coffey:</b> Restoration of Species Diversity and Hydrologic Function in Wetlands Within the Coastal Dune Lake Watershed	<b>Jason Scullion:</b> Using Camera Traps to Inform Protected Area Planning and Management	<b>Joseph Jaros:</b> Understanding the Growth and Composition of Japanese Knotweed Stands: Implications for Management	Discussion	<b>Scott Bearer:</b> Using Prescribed Fire as a Tool to Restore Gameland Habitats	<b>Roger Latham:</b> Understanding Successional Pathways to Conserve Serpentine Grasslands
12:15 pm				<b>Emily Rauschert:</b> Biotic and Abiotic Factors Drivers of the Success of the Invasive Plant, Lesser Celandine			
12:30 pm	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH

Wednesday, Oct. 9

PITTSBURGH, PENNSYLVANIA

2019 NATURAL AREAS CONFERENCE

Wednesday, Oct. 9

Room	Woodlawn	Haselton	Fountainview	Elwood 1	Elwood 2	Stoops Ferry	Edenburg
Topic	Managing Natural Areas in a Changing Climate	SYMPOSIUM Collaborative Plant Conservation: Five Perspectives	Restoration and Management of Urban Natural Areas	Invasive Species Management and Prevention	Using Data and Technology to Advance Conservation Speed	From Pollinators to Carbon: A Toolbox for Management and Restoration	Presque Isle Priority Wetland Restoration (Erie, PA), 2012-2018 and Beyond
Moderator	Danielle Shannon	Kristi Allen	Alicia Beattie	Terri Hogan	John Taylor	Marion Holmes	Robert Whyte
2:00 pm	<b>Patricia Leopold:</b> Mid-Atlantic Forest Ecosystem Responses in a Changing Climate	<b>David Lincicome:</b> Formation of the Tennessee Plant Conservation Alliance: No Need to Reinvent the Wheel but Sometimes a Few New Spokes Might be in Order	<b>Kevin Grieser:</b> Urban Headwater Stream Restoration: Maximizing Funding and Resources to Meet Multiple Objectives	<b>Terri Hogan:</b> INHABIT: A Web Application to Deliver Habitat Suitability Models and Bridge the Scientist-Practitioner Divide	<b>Kevin Rohling:</b> Strengths and Weaknesses of Assessing Amur Honeysuckle Infestations Using UAV-Captured Imagery	<b>Matthew Opdyke:</b> Harnessing Citizen Science to Promote Community Stewardship, Pollinator Research, and Habitat Restoration	<b>Holly Best:</b> An Epic War: Presque Isle State Park vs. Invasive Plants
2:15 pm		<b>Tara Littlefield:</b> Growing a Network to Protect our Rare and Declining Flora: The Start of Kentucky's Plant Conservation Alliance	<b>Alicia Beattie:</b> Targeted Forest Management and Restoration Efforts to Protect Coldwater Stream Habitats	<b>John Marino:</b> Collaborating with Watercraft Inspection Data to Mitigate Aquatic Invasive Species in NY and PA	<b>James Rosson Jr.:</b> Changes in the Areal Extent of White Oak Forests Between 2005 and 2015 in Kentucky and Tennessee, USA	<b>Michael Lott:</b> Restoration Challenges of a Mountaintop Natural Community at Bull Run Mountains Natural Area Preserve, VA	<b>Robert S. Whyte:</b> The Integration of Plant Monitoring Data into iMapInvasives as Part of the Presque Isle Priority Wetland Restoration (PIPWR) Project
2:30 pm	<b>Danielle Shannon:</b> Responding to Climate Change Impacts in Forested Watershed Management	<b>Kristi Allen:</b> The Importance of Interdisciplinary Collaboration in Plant Conservation: Perspectives from a Social Worker and Public Administrator	<b>Vanessa Beauchamp:</b> Effect of Legacy Sediment Removal and Floodplain Reconnection on Riparian Plant Communities	<b>Elaine Ferrier:</b> <i>Phragmites</i> Management in the Great Lakes Basin: Science and Collaboration as Pillars of Invasive Species Management	<b>Justin Schlawin:</b> Finding Maine's Smallest Wetlands: Remote Sensing, LiDAR, and the Elusive Vernal Pool	<b>Amber Barnes:</b> Spreading Wings and Seeds Across the Midwest	<b>Amber Stilwell:</b> Fish Surveys in Restored Priority Wetland Habitats on Presque Isle State Park, Erie, PA
2:45 pm		<b>Michael Kunz:</b> A Rose by Another Name can Smell as Sweet: Over 20 Years of Conservation Networking in North Carolina	<b>Valerie Carter-Stone:</b> Fish and Freighters: Habitat Restoration Along the Cuyahoga River's Shipping Channel	<b>Colleen Lutz:</b> Tracking Invasive Species Using Citizen Science, Water Chestnut and Jumping Worms, OH MY!	<b>James Whitacre:</b> Characterizing Forest Fragments with Modern UAV Technology	<b>Marion Holmes:</b> Forest History for Conservation: Assessing Forest Age, Land-use History, and Diversity at Chatham University Eden Hall	<b>Sean Dalton:</b> Fish and Amphibian Surveys in Restored Priority Wetland Habitats on Presque Isle State Park, Erie, PA
3:00 pm	<b>Bob Zaino:</b> Vermont Conservation Design: Using Coarse Filters for a Conservation Vision in a Changing Climate	<b>Emily Roberson:</b> The Native Plant Conservation Campaign: A National Native Plant Society for the United States	<b>Joel Perkovich:</b> Assessing and Enhancing Ecological Value in the Allegheny County Park System	<b>Cory Gritzmacher:</b> What the Sniff is All About	<b>John Taylor:</b> Analysis of Impact of Emerald Ash Borer on an Indiana on Old-Growth Forest Using GIS and Aerial Imagery	<b>Discussion</b>	<b>Jen Salem:</b> Four Seasons of Growing: Plant Propagation for Wetland Restoration on Presque Isle State Park
3:15 pm	<b>Discussion</b>	<b>Discussion</b>	<b>Robert Stewart:</b> Urban Stream Restoration in Pittsburgh's Four Mile Run Watershed (Aka M29 Sewer Shed)	<b>Carra Carrillo:</b> Incorporating Human Behavior into Ecological Models of Invasive Species: A Dreissenid Mussel Case Study	<b>Evan Newman:</b> Plecoptera of Indiana: Using Museum Data to Determine Spatial Distributions and Conservation Need	<b>Discussion</b>	<b>Discussion</b>
3:30 pm	<b>BREAK</b>	<b>BREAK</b>	<b>BREAK</b>	<b>BREAK</b>	<b>BREAK</b>	<b>BREAK</b>	<b>BREAK</b>



## NAA Annual Membership Meeting and Luncheon

12:30 - 2 pm Reflections Room

All current NAA members are encouraged to attend. Hear an update on the state of the organization and participate in electing new members and officers of the Board of Directors. Lunch will be provided for those who indicated they would be attending when they registered for the conference.

**8:30 am - 12:30 pm Flexible Tools to Increase the Effectiveness and Scale of Land Conservation for Environmental and Climate Resilience** (Woodlawn)  
Learn about tools for protecting habitats facing development pressure and uncertain climate change impacts. Using the San Francisco Bay Area as a model, speakers will highlight ecoregional-scale data in local land protection, flexible planning and management, and effective communication to communities, planners, and policymakers.

**8:30 am - 12:30 pm Integrating Education into Conservation Planning to Foster Stewardship** (Elwood 2)  
Are you growing the next generation of natural areas stewards? Join environmental education professionals from the Western Pennsylvania Conservancy, the University of Pittsburgh, and Slippery Rock University to learn how your organization can engage children, youth, students, minorities, and underserved communities in reflective stewardship, holistic identity development, and conservation.

**2 - 3:30 pm Collaborative Plant Conservation: Five Perspectives** (Haselton)  
Join Plant Conservation Alliance organizers from five states and the National Plant Conservation Campaign to connect with other conservation professionals and learn how to form effective partnerships, integrate expertise across specializations, train volunteers, address "plant blindness," and bring plant conservation to the attention of policymakers and funders.

Wednesday, Oct. 9

PITTSBURGH, PENNSYLVANIA

2019 NATURAL AREAS CONFERENCE

Wednesday, Oct. 9

## Closing Plenary Session 4 – 5:30 pm Ballroom 5

It's the nature of many of us in natural areas conservation to quietly go about our work, making do with the resources at hand and hoping that the next grant or budget cycle keeps it all going. Too often we lose sight of an important part of our work: letting others know what we do and why it's important. How we view communication and how we incorporate it into our work is more fundamental to our success than we might expect. There is an art in crafting compelling messages and offering them to the right people at the right time, whether in state government, politics, or social media.

Our closing speakers offer insights into what it means to effectively and persuasively communicate inside and outside our institutions. Tom Smith leads the Virginia Natural Heritage Program, a team that has built an exemplary natural areas system in part by effectively demonstrating the value of conservation to lawmakers. Chris Martine, a professor and biodiversity scientist, promotes botany and conservation by sharing science in ways that engage diverse audiences. Jacqui Bonomo advocates for conservation and environmental protection with PennFuture, a leader in Pennsylvania's transition to clean energy, natural resource protection, and sustainable community development.

Please join us to hear from our panel and participate in our facilitated discussion afterward.

**4 pm Introduction:** Lisa Smith and Jeff Wagner

### PLENARY ADDRESSES

**4:05 pm Virginia's Natural Area Preserves System – a 33-Year Success Story by Tom Smith**

Virginia was the 43rd state to launch a Natural Heritage Program. The 1989 Natural Area Preserves Act codified the Natural Heritage Program's responsibilities, including the establishment of the Virginia Natural Area Preserves System. Built on the wisdom of natural area preserves acts from across the Midwest and the expertise of The Nature Conservancy, the Virginia act provided an excellent foundation for the launch of the program. The program went from zero to 63 natural area preserves that protected 760 natural community and rare species locations on 57,276 acres, and the conservation team

grew from 11 to 43 full-time staff between 1990 and today. Smith discusses the natural heritage conservation team that made this happen, political trials and successes, partnerships, outreach, and planning for transition.



BECKY DONALDSON

**4:20 pm Meet the People Where They Are: Inspiring a Love for Nature by Going Online by Dr. Chris Martine**

Using case studies based on recent attempts to promote nature-related research/concepts through multiple types of media, Chris Martine suggests strategies that any working manager/scientist might employ when hoping to spread the word about their conservation outcomes and the places/species they are helping to protect.

**4:35 pm How the Natural Areas Community Must Effectively Champion Biodiversity Conservation by Jacquelyn Bonomo**

The combined urgencies of the climate emergency and species extinction necessitate advocacy from a set of voices not heard frequently enough. Bonomo talks about the need for biodiversity conservation practitioners to increasingly engage with elected officials, funders, the media, and other thought leaders as these influencers shape public opinion around our issues.

**4:40 pm Q&A with speakers**

### ABOUT THE SPEAKERS



**Tom Smith**  
Virginia Department of Conservation and Recreation, Deputy Director of Operations

Tom Smith oversees the operation of the Virginia Natural Heritage Program, Virginia State Parks, Land Conservation, and Virginia's Outdoor Recreation Programs. Smith served as the Natural Heritage Division director at DCR from 1991–2016, dedicated to conserving Virginia's biodiversity and establishing the State Natural Area Preserve System. Prior to coming to Virginia, Smith was the director and plant ecologist for The Nature Conservancy's office of the Pennsylvania Natural Heritage Program from 1982–1990; a field ecologist with the Tennessee Natural Heritage Program from 1980–1982, and staff botanist for the Tennessee Department of Transportation. He currently serves as an advisor to Southern Conservation Partners and NatureServe, and on the Flora of Virginia Board of Directors. Smith was recognized by NatureServe with its Lifetime Achievement Award in 2016 and received the 2019 Environmental Leadership Award by the Virginia Military Institute's Center for Leadership and Ethics during the Environment Virginia Symposium.



**Dr. Chris Martine**  
David Burpee Professor, Bucknell University

Dr. Chris Martine spent his childhood tromping through the woodlots and culverted streams of suburban New Jersey. By the time he was a teenager, he had memorized a handful of Golden Guides, but it wasn't until a few years later, as a first-gen college student, that he realized a person could "do nature" as a career. A significant focus of his life since then has centered on a desire to a) Discover cool stuff and b) Tell people about it. Martine actively engages non-science audiences across multiple outlets, including as host/producer of the YouTube series "Plants are Cool, Too!" Follow him on Twitter @MartineBotany.



**Jacquelyn Bonomo**  
President and CEO, PennFuture

Jacquelyn Bonomo brings a career's worth of national environmental leadership, personal activism, and conservation efforts to her role as president and CEO of PennFuture. Prior to her promotion to this role, Bonomo served as the organization's executive vice president and chief operating officer, with expert oversight of PennFuture's departmental operations, vendors and contracts, fiscal planning and fundraising, as well as grant initiatives and strategic planning. Bonomo's career experience includes serving as executive director of the Chesapeake Bay Funders Network and vice president of conservation programs for the Western Pennsylvania Conservancy, holding various leadership positions with National Wildlife Federation, and working as executive director and vice president of the Maryland and D.C. state program of the National Audubon Society.

## Natural Areas Association Awards Dinner

6 - 9 pm Reflections Room

• 6 pm Cocktails • 7 pm Dinner • 7:30 pm Program begins

Join us in the Reflections Room for our annual Awards Dinner as we celebrate your colleagues for their achievements in natural areas conservation. We present the George B. Fell Award and the Carl N. Becker Stewardship Award, as well as present awards to the winners of our student poster and presentation competitions.

### THE GEORGE B. FELL AWARD

The George B. Fell Award, the NAA's highest award, recognizes exceptional achievements in the natural areas profession.

**Dr. Reed Noss** serves as chief scientist for the Florida Institute for Conservation Science. He holds a B.S. in education from the University of Dayton, an M.S. in ecology from the University of Tennessee, and a Ph.D. in wildlife ecology from the University of Florida. Noss is a leader and highly respected author, educator, lecturer and consultant in natural history, ecology and conservation biology. Throughout his career, he has been committed to research, education and environmental policy. Noss was formerly the Davis-Shine Professor of Conservation Biology and Provost's Distinguished Research Professor at the University of Central Florida in Orlando. A primary focus of his research has been on systematic conservation planning at regional and continental scales. He was instrumental in developing the concept of re-wilding and the idea that natural areas and semi-natural areas should be connected in networks to provide space for wide-ranging species. Noss bridges the gap between science and policy in conservation. His engagement in land planning for public and private lands has shaped America's natural areas. His pragmatic approach is informed by the principles of conservation science, many of which he helped to develop. Noss is frequently sought as a keynote speaker or presenter of lectures, seminars or participant on conservation panel discussions.

### THE CARL N. BECKER STEWARDSHIP AWARD

The Carl N. Becker Stewardship Award recognizes individuals or groups for excellence and achievement in managing the natural resources of reserves, parks, wilderness, and other protected areas.

The Cleveland Museum of Natural History's Division of Natural Areas Stewardship Team — **Dr. David Kriska** (Team Leader), **Ben Piazza**, **Rebecca Donaldson**, **Ken Schneider**, **Mia Yeager**, **Leah Vasarhelyi**, and **Grai Oleksy** — have devoted the past four years to the Mentor Marsh Restoration Project, the largest restoration of a free flowing marsh system in the Great Lakes. The marsh is owned and managed jointly by the Cleveland Museum of Natural History and the Ohio Division of Natural Areas & Preserves. The project involved treating an 800-acre *Phragmites australis* monoculture with herbicide to allow the marsh and historic swamp forest habitats to revegetate, supplemented with the aerial deposition of 200 million seeds and the planting of 24,000 plugs and 5,700 woody species. The Stewardship Team and project partners raised over \$2 million dollars in federal, state, and local grants for this restoration project. Restoration work required the coordination of activities on over 100 parcels owned by over 15 entities and many more adjacent landowners. Proactive public outreach played a major role in garnering community support for the work. Team members went door-to-door to visit with residents whose properties bordered the marsh, and they distributed flyers and held public meetings to educate the public on the project and the use of herbicides. The marsh's restoration has been lauded locally.



The members of the Cleveland Museum of Natural History's Division of Natural Areas Stewardship Team, pictured with Argo amphibious vehicles, collectively receive this year's Carl N. Becker Stewardship Award for their work on the Mentor Marsh Restoration Project.

PHOTO BY DAVID KRISKA

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**Dr. Reed Noss**, chief scientist for the Florida Institute for Conservation Science, is the recipient of the 2019 George B. Fell Award.



We celebrate the achievements of this year's honorees at the Natural Areas Association Awards Dinner.

PHOTO BY GLENN JUDAY

Wednesday, Oct. 9

PITTSBURGH, PENNSYLVANIA

2019 NATURAL AREAS CONFERENCE

Wednesday, Oct. 9

## Conference Field Workshops

7 - 9 am Main entrance of the Sheraton

If you signed up for a field workshop, it will be listed on a ticket in the sleeve of your name badge. It will also tell you whether or not you need to pick up a boxed lunch. For those who do need to pick up lunches, they will be available at the registration desk. A catered lunch will be provided on site for workshops without boxed lunches.

Please be in the hotel lobby about 10 minutes before your scheduled departure. Buses will leave on time, and no refunds will be issued if you miss your bus.

1. **Botany by Bike: Youghiogheny River Scour Along the Great Allegheny Passage Bike Trail**  
(7 am - 6:30 pm, no boxed lunch)
2. **Canoeing to Sycamore Island: The Protection, Planning and Transformation of a Unique River Oasis**  
(8:30 am - 4 pm, boxed lunch)
3. **Bear Run Nature Reserve: An Example of Forest Restoration on the Lands and Waters of Frank Lloyd Wright's Fallingwater** (7:30 am - 5:30 pm, no boxed lunch)
4. **Pittsburgh Urban Wilds Tour: Managing the Steel City's Wild Lands** (8:45 am - 3:45 pm, boxed lunch)
5. **At the Edge of Glaciation: Prairie Remnant Management, Threatened Species Protection, and Land Conservation** (8 am - 4 pm, boxed lunch)
6. **The Youghiogheny River Gorge Paddle/Pedal: A Biodiversity Hotspot and Recreation Destination**  
(7 am - 6:30 pm, no boxed lunch)
7. **Exploring the Allegheny River: Freshwater Mussel Conservation Sites and River Floodplain Grasslands by Canoe** (7:15 am - 5:30 pm, boxed lunch)

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Ferncliff Peninsula in Fayette County, PA. PHOTO BY GREG FUNKA

Thursday, Oct. 10

PITTSBURGH, PENNSYLVANIA

# THE POWER TO SUPPORT THE NATURAL WORLD



The Pittsburgh Foundation is pleased to support the 2019 Natural Areas Conference. Our sponsorship has made it possible for more than 40 natural areas practitioners from the Pittsburgh region to attend. Together, we can protect the lands and waters on which our region depends, today and for generations to come.



[pittsburghfoundation.org](http://pittsburghfoundation.org)

## Conference Planning Team

Our annual Natural Areas Conference takes “a community” to organize. There are many who contributed in meaningful ways over the past two years. Too many to be named. On behalf of the staff and board of directors of the Natural Areas Association, we thank you!

### PLANNING TEAM

**Jeff Wagner**, Conference Chair,  
Pennsylvania Natural Heritage Program /  
Western Pennsylvania Conservancy  
**Ephraim Zimmerman**, Program Chair,  
Pennsylvania Natural Heritage Program /  
Western Pennsylvania Conservancy  
**Greg Podniesinski**, Pennsylvania Natural Heritage  
Program / Pennsylvania Department of Conservation  
& Natural Resources  
**Chris Firestone**, Pennsylvania Department of  
Conservation & Natural Resources  
**Lisa Smith**, Natural Areas Association  
**Amy Wills**, Natural Areas Association  
**Sarah Pears**, Natural Areas Association  
**Macey Bates**, Natural Areas Association

### ADDITIONAL SUPPORT

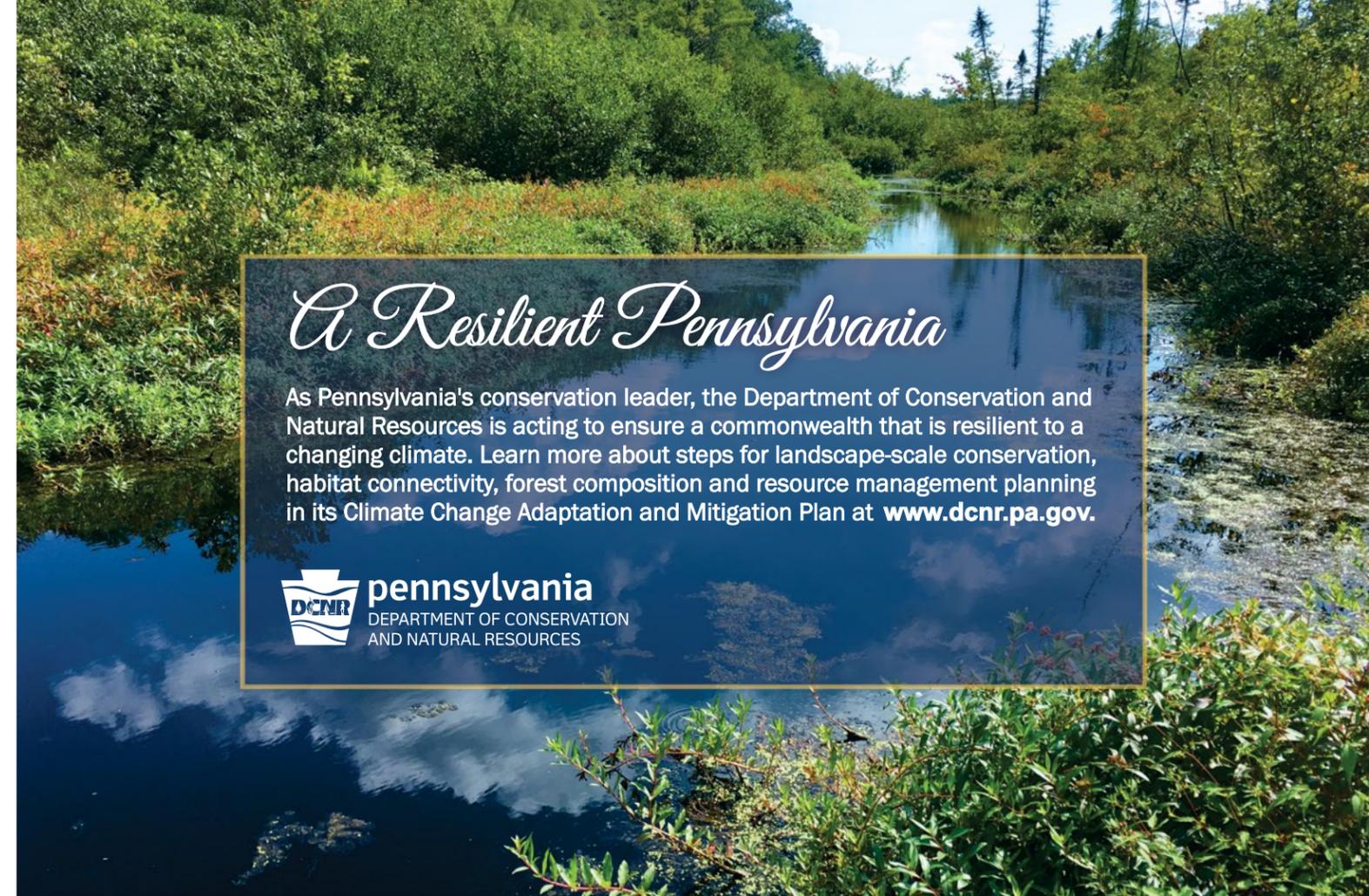
**Renee Boronka**, Cleveland Museum of Natural History  
**Alice Heikens**, Franklin College  
**Terri Hogan**, National Park Service  
**Rick Myers**, Virginia Department of Conservation  
and Recreation  
**Emilie Rzotkiewicz**, Allegheny Land Trust  
**Caitlin Seiler**, Allegheny Land Trust



West Virginia White butterfly on marsh marigold. PHOTO BY PETER WOODS

## Colophon

**Editorial Services:** Sarah K. Riehl **Graphic Design:** Juliano Boronka **On the cover:** Youghiogheny River Gorge in the Laurel Highlands of Western Pennsylvania. Photo by Greg Funka. **Icon:** Thumbtack by Ted Grajeda from the Noun Project



## A Resilient Pennsylvania

As Pennsylvania's conservation leader, the Department of Conservation and Natural Resources is acting to ensure a commonwealth that is resilient to a changing climate. Learn more about steps for landscape-scale conservation, habitat connectivity, forest composition and resource management planning in its Climate Change Adaptation and Mitigation Plan at [www.dcnr.pa.gov](http://www.dcnr.pa.gov).





U.S. Department of the Interior  
Bureau of Land Management

## Plant Conservation & Restoration Program



### Building Capacity for Natural Areas Restoration

BLM's Plant Conservation & Restoration Program (PCRP) works with diverse partners to collect and conserve native seed, research native plants and restore public lands. BLM is contracting with farmers to grow over 200 native species in hopes of promoting a private native seed industry to meet the demand for genetically appropriate native plants for restoration. This partnership is crucial to improving our ability to respond to wildfire & extreme weather.

Come visit our table to learn more about the BLM's collaborative efforts to conserve and restore native plant communities on public lands or check us out online at [blm.gov/nativeplants](http://blm.gov/nativeplants)

SAVE THE DATE

RENO, NV

10.14-16.2020

# 2020 natural areas conference

photo | Lance Oditt | Studio 4760 North

DULUTH, MN

9.21-23.2021

# 2021 natural areas conference

natural  
areas  
ASSOCIATION

SAVE THE DATE

2020 we are based in Reno, a short 22 miles from Lake Tahoe. 2021 be ready to gaze at the northern lights as we explore Duluth. See you there!

VISIT [naturalareas.org](https://naturalareas.org) FOR DETAILS.