Innovations in Invasive Species Management Conference

Gaylord Opryland Hotel and Convention Center

Nashville Tennessee

December 12-14th, 2018

www.invasiveplantcontrol.com/conference18/

Dear Conference Participants,

On Behalf of Invasive Plant Control, Inc., The National Military Fish and Wildlife Association's Invasive Species Working Group, the Southeast Exotic Pest Plant Council, the Tennessee Invasive Plant Council and the National Association of Invasive Plant Councils I would like to welcome you to Nashville, TN for the Innovations in Invasive Species Conference being held at the Gaylord Opryland Hotel and Convention Center December 12th through the 14th, 2018.

We have an exciting mix of professional and novice land managers in Nashville this week excited to hear about new innovations in the invasive species industry. Look around and you will find not for profit land managers, Department of Defense resource managers, NPS, USFS and DOE invasive species experts. We have state parks, garden club members, agricultural extension agents and academia with us plus representatives from many other organizations. We would like to thank all of the speakers, vendors and attendees for making the time and financial commitment to be here with us in Nashville. Exhibits will be open throughout the entire conference and lunch and breaks will be held by the Presidential Boardrooms. We urge you to visit with one another, make new contacts and ask questions this week. There are many experts here with hands on knowledge of techniques that might be the tool you are missing to control the invasive species on your property.

Again, on behalf of the host organizations, welcome to Nashville!

Sincerely,

Steven T Manning
Conference Coordinator
President
Invasive Plant Control, Inc.

Conference Hosts

Invasive Plant Control, Inc. was established in 1997 and has operated as an entity exclusively focused on the control of invasive species with projects ranging from the Virgin Islands to the hardwoods forests of northern Pennsylvania and west to Oregon. In 2006, IPC began offering its consulting services globally with its first project in Tanzania, Africa designing and implementing a course on prevention of invasive species through ports of entry. IPC's travel teams roam the United States targeting invasive species in fragile natural areas. Utilizing an Integrated Pest Management approach, IPC focuses on selectivity through proper timing and application methods. IPC also offers technologically advanced delineation, GPS/GIS & mapping of invasive species. All IPC management plans and on the ground control projects have a strong emphasis on *selectivity*. Protection of desirable flora and fauna is of the utmost importance in all IPC projects. Please visit our website at www.invasiveplantcontrol.com

National Military Fish and Wildlife Invasive Species Working Group

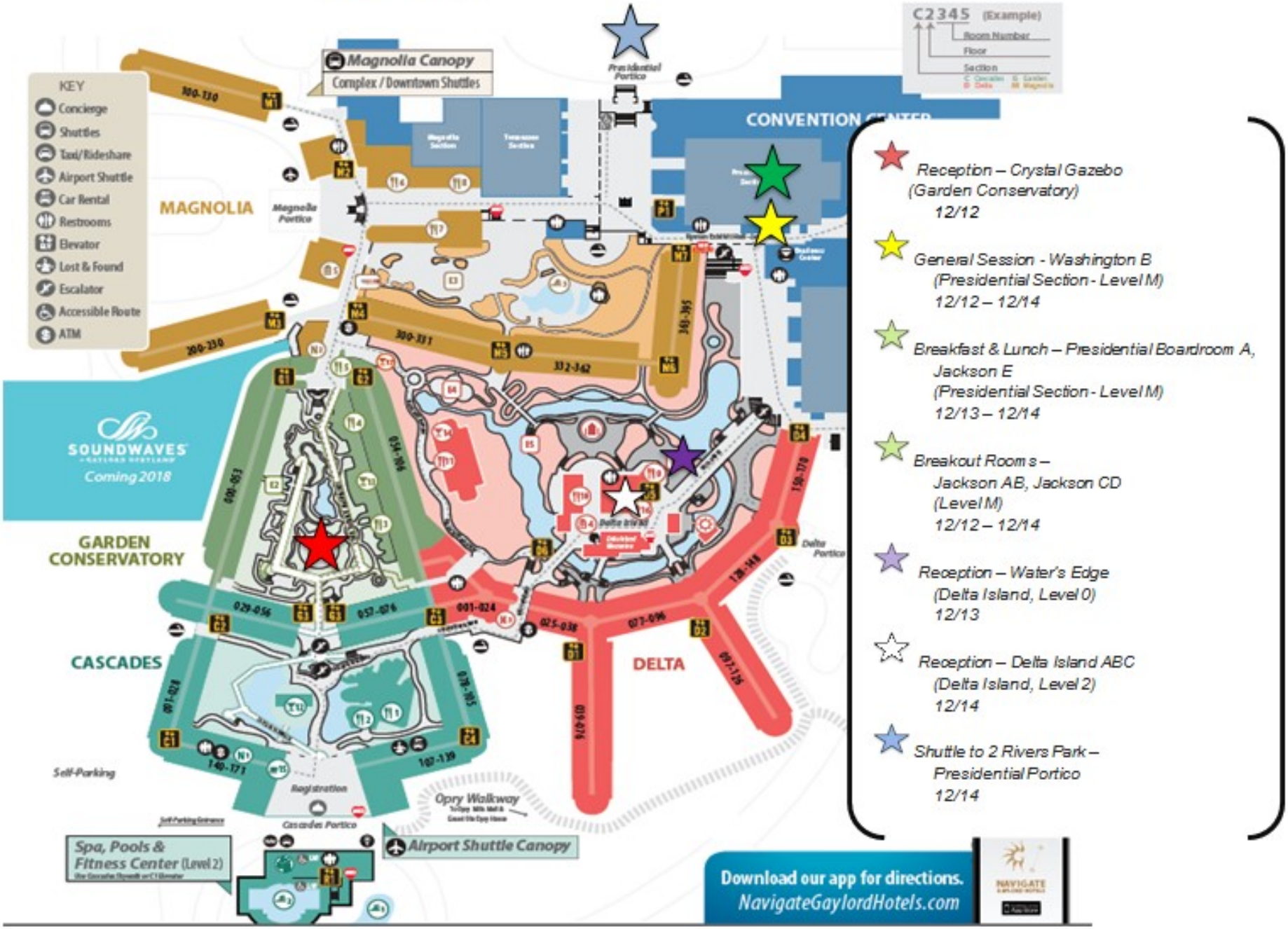
The Invasive Species Working Group (ISWG) was formed in 2001 to address the impacts of invasive species on U.S. military lands and waters. The WG is devoted to the management of natural ecosystems through the study and transfer of information relative to invasive plant and animal species. The Goals of the ISMG are to: Facilitate communication and information exchange among members of the National Military Fish & Wildlife Association (NMFWA) interested in Invasive plant and animal species, enhance knowledge and technical capabilities of Department of Defense (DOD) natural resources professionals in the area of Invasive species management and Increase awareness and appreciation within DOD of Invasive species management issues, decision-making processes, and funding avenues.
http://www.nmfwa.net/index.php/working_groups/invasive_species

The Tennessee Exotic Pest Plant Council was established March 12, 1994 in Nashville at the first annual Tennessee Exotic Pest Plant Symposium with assistance and support from similar organizations in California and Florida. TN-IPC's role is to raise public awareness about the spread of invasive exotic plants into Tennessee's natural areas, facilitate the exchange of information concerning management and control of invasive exotic plants, provide a forum for all interested parties to participate in meetings, workshops, and an annual symposium, and to share the benefits from information provided by TN-IPC, serve as educational, advisory, and technical support on all aspects of invasive exotics and initiate campaign actions to prevent further invasive plant introductions. http://tnipc.org/

The mission of the Southeast Exotic Pest Plant Council is to support the management of invasive exotic plants in natural areas of the Southeast U.S. by providing a forum for the exchange of scientific, educational and technical information. The Southeast Exotic Pest Plant Council is a non-profit organization and is not a regulatory agency. https://www.se-eppc.org/

Promoting effective management of invasive plants in natural areas and wildlands, the National Association of Invasive Plant Councils (NAIPC) is a coalition of state and regional Exotic Pest Plant Councils (EPPCs) and Invasive Plant Councils (IPCs) representing professional natural resource managers, scientists and others with an interest in invasive plant management. NAIPC also serves as a contact hub for multi-agency state invasive species councils, (CWMAs) and Cooperative Invasive Species Management Areas (CISMAs) and other partnerships based on collaborative management of invasive plants. https://www.na-ipc.org/

Welcome to Gaylord Opryland Innovations in Invasive Species Management!



Directions and Parking

Getting to Nashville and the Convention Center

The Gaylord Opryland Resort and Convention Center is approximately 8.3 miles N of the Nashville airport. The hotel offers an airport shuttle service for $19 each way. Reservations should be made in advance.

Area Airports

- Nashville International Airport - BNA
- Airport Phone: +1 615 275 1600

Airport shuttle service, scheduled, fee: 19 USD (one way)

Shuttle Phone: +1 615 883 2211

Bus service, fee: 2 USD (one way)

Estimated taxi fare: 30 USD (one way)

Driving from the airport

Travel south on Terminal Drive toward BNA Arriving Flights. After 0.7 mile make a slight right followed by a slight left to stay on Terminal Drive. Travel 0.6 mile and take the ramp onto Interstate 40 West. Travel 1.2 miles to exit 215B and merge onto TN-155 North/Briley Parkway. Travel 4.3 miles to exit 11 for Opry Mills Drive. Continue straight ahead for 0.9 mile to Opryland Drive and turn right. Travel 0.4 mile and turn left to the hotel.

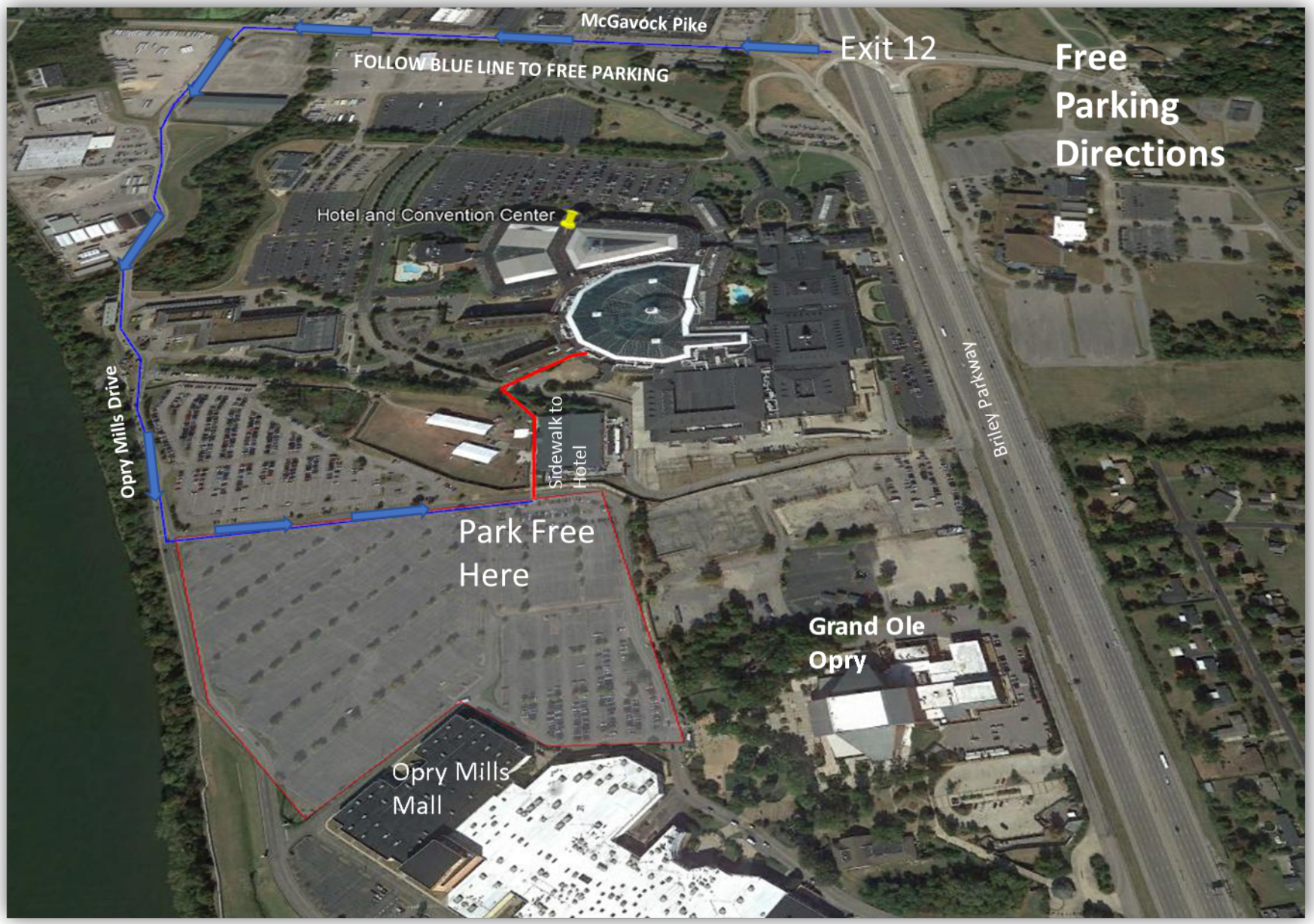
Paid Parking

If you will be driving and parking at the resort please be aware that the parking fees are as follows:

- On-site parking, fee: $29 USD daily
- Valet parking, fee: $38 USD daily
- Electric car charging stations: 4, Complimentary

Free Parking

There is free parking available at the Opry Mills Mall which is located next door to the resort. It is an easy 1/10th of a mile walk to the resort from the closest parking area to the hotel. We have provided a map on the following pages to guide you to this free parking. Please note that hotel security does not patrol this lot but it is heavily used by mall and hotel guests alike.

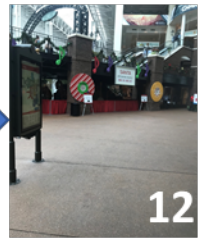


Free Parking is available in the Opry Mills Parking Lot. It is a shorter walk from this parking area to the convention center than many entryways at the resort. Take Briley Parkway (TN155) to the McGavock Pike Exit 12. Follow McGavock Pike as indicated on the map above. Turn left onto Opry Mills Drive and go ½ mile around the outskirts of the resort following the signs to Opry Mills and the ICE show which will take you to the OpryMills Parking Lot. Turn left into the parking area and park in the area indicated on the map which is by the Gaylord Opryland Events Center. The pathway to meeting attachment shows you a step by step path to the Convention Center which is only 1/10th of a mile from the parking area.

Path to Convention Center/Hotel from the Free Parking area next to Opry Mills Mall

Park next to the Gaylord Opryland Events Center. Pass by the events center and snow tubing area to the covered walkway. This sidewalk takes you directly to the entrance by the Delta. Don't hesitate to ask someone directions. It's a very big place.

Park at the West corner of the OpryMills Lot by the Gaylord Events Center



Go up the stairs and the conferences rooms are at the top or take the elevator near the stairs to go up one floor.

You have arrived at Washington B

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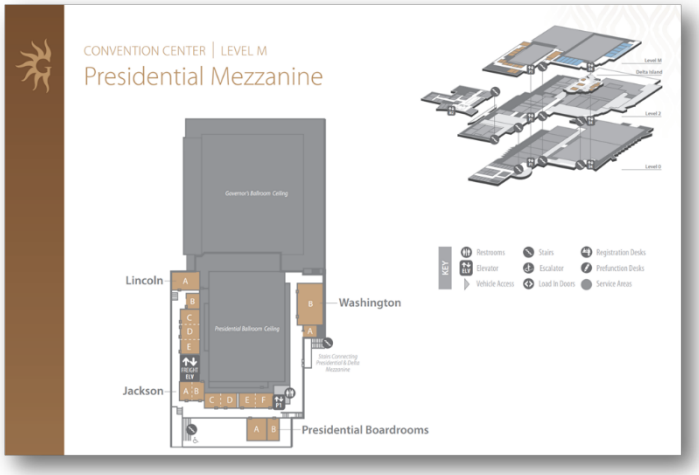
General Information

Conference Location



The Innovations in Invasive Species Management Conference will be held at the Gaylord Opryland® Resort & Convention Center, the flagship of Gaylord Hotels®, in Nashville, Tennessee — just 10 minutes from Nashville International Airport. The resort is easily accessible to Music City's legendary attractions, including the Grand Ole Opry® , Ryman Auditorium® , Wildhorse Saloon® and the General Jackson® Showboat. The equipment demonstrations will be held at Two Rivers Park just a couple miles from the conference Center.

Conference Session Locations
The Innovations Conference will be held in the Presidential Mezzanine at the Opryland Hotel and Convention Center. Washington B, Jackson AB and Jackson CD will be the location of the concurrent sessions. Washington B Ballroom will be utilized for the opening sessions. Exhibits and posters will be located in the hallways between the meeting rooms. Posters will be located in Washington B Ballroom.

All meals will be served buffet style with tables set in Presidential Boardrooms A & B and Jackson E.

Washington A will be available for speakers if time and space is required to prepare presentations on site.

Conference Registration

Registration will be located at the Crystal Gazebo in the Garden Conservatory during the social Wednesday evening from 7:00-8:30 pm. Registration and information tables will also be available outside of Washington B Ballroom throughout the conference.

Resource Tables

Resource tables will be available at the rear of Washington B Ballroom. We encourage you to provide complimentary invasive species publications or other information for distribution on these tables.

Posters and Exhibits

Posters and Exhibits will be located in Washington B from noon Wednesday through 4:00 pm Friday afternoon. Exhibitors and poster presenters will set up their displays Wednesday from 11:00am-1:00 pm. Please see the list of exhibitors starting on page 94 of the program.

Food and Beverages

Coffee and Water will be available throughout the day in Washington B. The food and beverages below will also be provided as part of your registration fee and generous donations from Invasive Plant Control, Inc. (www.invasiveplantcontrol.com). You will also find multiple options onsite for casual to fine dining on the proceeding page.

Wednesday December 12th, 2018

7:00-8:30 pm at the Crystal Gazebo in the Garden Conservatory

Vegetable Crudité with Ranch Dipping Sauce, Traditional Buffalo Wings with Bleu Cheese Dipping Sauce, Celery Sticks, Crispy Chicken Tenders with Honey Mustard Dipping Sauce, BBQ Meatballs, Tri Color Tortilla Chips with Salsa, Ice Tea and Punch and a cash bar will be available during the evening reception at the Crystal Gazebo

Thursday December 13th, 2018

Continental Breakfast will be available from 7:00 am to 8:00 am outside of the Presidential Boardrooms and will include Freshly Brewed Coffee, Decaf Coffee and Assorted Hot Teas, Orange Juice, Market Style Fruit, Assorted Muffins and Butter and Assorted Jams

Lunch sponsored by Invasive Plant Control Inc. outside of the Presidential Boardrooms from 12:15-1:15 pm will include Mixed Green Salad Served with Ranch and Balsamic Vinaigrette, Turkey on a Croissant, With Roasted Garlic Aioli, Lettuce, Tomato, Assorted Bags of Chips, Cookies and Iced Tea

Evening Reception Sponsored by Invasive Plant Control, Inc. at the Water's Edge in the Delta Atrium from 5:30-7:00 pm will include Domestic Cheese with Grain Mustard, Mini Pizzas, Peanut Chicken Satay, Pork sliders with bbq sauce, Pita Chips and Hummus, Iced Tea and cash bar.

Friday December 14th, 2018

Continental Breakfast will be available from 7:00 am to 8:00 am outside of the Presidential Boardrooms and will include Freshly Brewed Coffee, Decaf Coffee and Assorted Hot Teas, Orange Juice, Market Style Fruit, Assorted Muffins and Butter and Assorted Jams

Lunch sponsored by Invasive Plant Control Inc. outside of the Presidential Boardrooms from 12:00-1:00 pm will include Coleslaw, Potato Salad, Hamburgers and Hot Dogs, Assorted Bags of Chips and Brownies and Iced Tea

Evening Reception Sponsored by Invasive Plant Control, Inc. at the Delta Island ABC in the Delta Conservatory from 5:00-6:30 pm will include Sliced fruit display, Fried TN Hot Chicken fritter sliders, Mac and Cheese Bar with assorted hot sauces, Kettle Chips and onion dip, Iced Tea and cash bar.

Restaurants & Lounges Located Within the Resort

Old Hickory Steakhouse
Inspired by President Andrew Jackson's nickname, our signature, this restaurant features 1855 Black Angus Beef seared to perfection, Artisan cheeses and an extensive wine list.

Ravello
Enjoy a dinner inspired by the Italian coastal town of Ravello. Sample selections from our antipasti bar and house-made pasta in a lush garden setting.

Cascades American Café
Starting with breakfast and moving into lunch and dinner, Cascades serves modern classics in a dramatic atrium setting.

Wasabi's
Try the freshest signature rolls and a variety of sake at our sushi bar inside Cascades American Café.

Solario Cantina
Enjoy the bold flavors of Mexico, signature margaritas and selections from our tequila bar in a vibrant patio atmosphere.

Findley's Irish Pub
Unwind at our antique wooden bar with a pint of craft beer and pub-style favorites.

Jack Daniel's
Experience the fine tradition of great Southern food, and sample "Tennessee Sippin' Whiskey" hand selected from the Distillery.

Fuse Sports Bar
Watch the game on one of 100+ HDTVs at this next generation sports bar, serving up tailgate-inspired favorites perfect for sharing.

Paisano's Pizzaria & Vino
Order a slice or a whole pie, plus salads and wine in a beautiful indoor courtyard.

Stax Burgers
Stack your toppings just the way you like at our burger bar.

Conservatory Café
Open all day, this marketplace offers grab-and-go breakfast items, sandwiches, salads, house-made pastries, beer and wine.

The Cocoa Bean
Our coffee house by the Cascades Lobby serves grab-and-go fare.

Delta Delight Frozen Yogurt
Pick your frozen yogurt and pile on the toppings to create a one-of-a-kind sweet treat.

Conservatory Wine Bar
Relax in sophisticated and chic surroundings with a diverse selection of wines.

The Falls
Our lobby lounge features small plates and hand-crafted cocktails in a breathtaking setting overlooking twin waterfalls.

The Library Lounge
Sip on aged bourbon or classic cocktails in our fireplace den inside Old Hickory Steakhouse.

Conference Agenda

Wednesday, Thursday and Friday, December 12-14th, 2018

Session: Board Meetings

Magnolia Boardroom A - December 12th, 2018 - 10:00 am to 7:00 pm

9:00 am to 12:00 pm	**Committee Meetings**
10:00 am to 12:00 pm	**Tennessee Invasive Plant Council Board Meeting**
6:00 pm to 7:00 pm	**Southeast Exotic Pest Plant Council Board Meeting**
7:00 pm to 8:30 pm	**Registration and Reception at the Crystal Gazebo located in the Magnolia Section of the Opryland Hotel**

Opening Session

Washington B Ballroom - December 12th, 2018 - 1:00 pm to 5:00 pm

Welcome and Opening Remarks

1:00 pm **"Prairie Restoration"**
Presenter: Dwayne Estes, Ph.D.
Executive Director, Southeastern Grasslands Initiative (SGI),
Austin Peay State University

1:30 pm **"Cut Back the Cutting! Pocket prairies- A Native Alternative to the Non-Native Lawn"**
Presenter: Mike Berkley
Co-Owner of GroWild, Inc., Fairview, TN

2:00 **"Policy & Politics in Conservation"**
Presenter: Dennis Niemeyer
Director of NC Green Industry Council

2:30 pm **Exhibitor Sponsored Break**

2:45 **"Citizen Science for every generation – baby boomers to generation z"**

Presenter: Chuck Bargeron

Associate Director, Center for Invasive Species and Ecosystem Health, University of Georgia

3:15 **"Python Removal Programs"**

Presenter: Jenny Ketterlin

Invasive Species Biologist, Everglades and Dry Tortugas National Parks

3:45 pm **"The Air Potato Patrol – Teaching IPM through Citizen Science"**

Presenter: Dr. William Lester

Residential/Commercial Horticulture Agent II, UF/IFAS Extension Hernando County, FL

4:15 **"*Mid-Atlantic Invaders Tool: A New Information Portal for Invasives in the Mid-Atlantic States"***

Presenters: Judith Fulton, Jil Swearingen, Chuck Bargeron

7:00 pm to 8:30 pm **Registration and Reception at the Crystal Gazebo located in the Garden Conservatory at the Opryland Hotel sponsored by Invasive Plant Control, Inc.**

Opening Session

Washington B Ballroom - December 13th, 2018 - 8:00 am to 9:45 am

7:00 am	**Registration and Continental Breakfast**
8:00 am	**Welcome and Opening Remarks**
8:10 am	**"From We Can't to We Can: Creating an Innovation Culture"** *Presenter: Jamie Reaser, PhD* *Executive Director, National Invasive Species Council Secretariat*
8:55	**"Predator Free New Zealand"** *Presenter: Prof. Dan Tompkins* *Project Manager: Science Strategy, Predator Free 2050*
9:45	**Exhibitor Break sponsored by Invasive Plant Control, Inc. www.invasiveplantcontrol.com**

Jackson AB Ballroom

Jackson Ballroom AB - December 13th, 2018 - 10:00 am to 12:35 pm

10:00 am	**"A Comprehensive Screening Program To Prevent Introductions And Prioritize Management Of Non-Native Plants And Their Cultivars"** *Presenter: Deah Lieurance* *Assistant Extension Scientist, UF/IFAS Center for Aquatic and Invasive Plants, University of Florida; S. Luke Flory2, Associate Professor, Agronomy Department, University of Florida.*
10:30 am	**"The Value of Volunteers in Invasive Species Management"** *Presenter: Paul Fowler* *Volunteer Coordinator, Friends of Warner Parks*

11:00 am	**"Real-Time Field Data Collection Using Survey 123 for ArcGIS: Applications for Invasive Plant Management Programs"** *Presenter: Ellen Allen* *South Florida Water Management District, West Palm Beach, FL*
11:30 am	**"Spatial Invasive Infestation and Priority Analysis (SIIPA) Tool in EDDMAPS"** *Presenter: Becca Winston* *Project Designer, MIA Consulting1, Shelley, ID*
12:00 pm	**"Collector app tracks invasive species management for ACRES Land Trust"** *Presenter: Casey Jones* *Director of Land Management, ACRES Land Trust, Indiana*
12:30 pm	**Luncheon sponsored by Invasive Plant Control, Inc. located in outside of the Presidential Boardrooms**

Jackson CD Ballroom

Jackson Ballroom CD - December 13th, 2018 - 10:00 am to 12:35 pm

10:00 am	**"Using Environmental DNA (eDNA) and Underwater Video as an early detection tool for invasive fish in Four Eastern Lake Ontario Tributaries"** *Presenter: Rob Williams* *Invasive Species Program Coordinator/Conservation Practitioner, The Nature Conservancy*
10:30 am	**"Radioactive Tumbleweeds and other Invasive Plant Control Efforts"** *Presenters: Una Song, Lead Policy Advisor/Office of Sustainable Environmental Stewardship, US Department of Energy* *Beverly Whitehead* *Environmental Protection Specialist/Office of Sustainable Environmental Stewardship, U.S. Department of Energy* *Eric Bradley* *Environmental Protection Specialist/ Office of Sustainable Environmental Stewardship, U.S. Department of Energy*

11:00 am	**"Successful Habitat Restoration Projects on the US DOE Oak Ridge Reservation"** *Presenter: Kitty McCracken* *Natural Resources Management Team, Oak Ridge National Laboratory*
11:30 am	**"Domestic cats: The Case for Management and Control"** *Presenter: Grant Sizemore* *Director, Invasive Species Programs, American Bird Conservancy*
12:00 pm	**"Large-scale Invasive Plant Control Efforts in the City of Alexandria, Virginia"** *Presenter: Rod Simmons* *Natural Resource Manager / Plant Ecologist, Natural Resources Division, Department of Recreation, Parks & Cultural Activities* *City of Alexandria, Virginia*
12:30 pm	**Luncheon sponsored by Invasive Plant Control, Inc. located in outside of the Presidential Boardrooms**

Washington B Ballroom

Washington B Ballroom - December 13th, 2018 - 10:00 am to 12:30 pm

10:00 am	**"To Be or Knotweed to Be: The Stakeholder Challenge"** *Presenter: Bobbi Simpson* *Liaison, California Exotic Plant Management Team, National Park Service, Point Reyes Station, California*
10:30 am	**"Novel approaches to invasive plants issues in Zion, Arches and Canyonlands National Parks"** *Presenter: Cheryl Decker* *North Coast and Cascades Exotic Plant Management Team* *North Cascades National Park Service Complex, Sedro-Woolley, WA*
11:00 am	**"Managing Invasive Plants in the Upper Midwestern Great Lakes National Parks"** *Presenter: Isaiah Messerly* *Biologist/Liaison, National Park Service* *Great Lakes Exotic Plant Management Team, St. Croix Falls, WI*

11:30 am	**"The National Capital Region EPMT and a new citizen science EDRR project"** *Presenter: Mark Frey* *EPMT Liaison, National Park Service, National Capital Region*
12:00 pm	**"Pesticide Application Manager, a program for applicators"** *Presenter: Brian McDonnell* *Liaison, Northeast Exotic Plant Management Team.*
12:30 pm	**Luncheon sponsored by Invasive Plant Control, Inc. located in outside of the Presidential Boardrooms**

Keynote Session

Washington B Ballroom - December 13th, 2018 - 1:00 pm to 2:30 pm

1:00 pm	**"SGHT Habitat Restoration Project - The World's Largest Rodent Eradication"** *Presenter: Dickie Hall* *Project Director, SGHT Habitat Restoration Project* *South Georgia Heritage Trust*
1:45 pm	**"Endocide concept and applications in control of invasive species"** *Presenters: Dr. Shiyou Li* *Director, National Center for Pharmaceutical Crops* *Arthur Temple College of Forestry and Agriculture* *Stephen F. Austin State University* *Steve Bullard* *Provost and Vice President of Academic Affairs* *Nacogdoches, TX*

Jackson Ballroom AB	
Jackson Ballroom AB - December 13th, 2018 - 2:30 pm to 5:15 pm	
2:30 pm	**"Evaluation of UAS Innovations for Invasive Terrestrial and Aquatic Plant Detection, Mapping, and Management"** *Presenter: Andrew Howell* *Graduate Research Assistant, Department of Crop and Soil Sciences, North Carolina State University*
3:00 pm	**"Eyes in the Sky vs. Boots on the Ground: An Evaluation of Small UAS for Terrestrial Invasive Plant Detection and Mapping"** *Presenter: Zachary Simek* *Adirondack Park Invasive Plant Program*
3:30 pm	**Exhibitor Break sponsored by Invasive Plant Control, Inc. www.invasiveplantcontrol.com**
3:45 pm	**"The Invasive Plant Management Association (IPMA), a model for providing an economic voice to promote state funding"** *Presenter: James L. Burney, Jr.* *President, Invasive Plant Management Association*
4:15 pm	**"Using Arc Collector to Streamline Invasive Species Data Collection"** *Presenters: Jessica Spencer and Douglas Swanson* *Invasive Species Biologist, US Army Corps of Engineers, Jacksonville District and Geographer, US Army Corps of Engineers, Portland District*
4:45 pm	**"WILD SPOTTER – Mapping Invasives in America's Wild Places"** *Presenter: Mike Ielmini,* *National Invasive Species Program Manager* *Forest Service National Forest System Headquarters*

Jackson CD Ballroom

Jackson CD Ballroom - December 13th, 2018 - 2:30 pm to 5:15 pm

2:30 pm **"Responding rapidly to Elodea - the first freshwater invasive plant in Alaska"**
Presenter: John Morton, Ph.D.
Supervisory Fish & Wildlife Biologist, Kenai National Wildlife Refuge
U.S. Fish and Wildlife Service, Soldotna, AK

3:00 pm **"Exploring innovative means for feral animal and invasive plant removal in The Nature Conservancy of Hawaii's Maui forest program"**
Presenter: Alison Cohan
Director, Maui Nui Forest Program, The Nature Conservancy
Maui Program, Makawao, HI

3:30 pm **Exhibitor Break sponsored by Invasive Plant Control, Inc. www.invasiveplantcontrol.com**

3:45 pm **"The Tennessee State Parks Environmental License Plate; Making Revenue Work for Parks"**
Presenter: Sam King
Stewardship Ecologist, Tennessee Department of Environment and Conservation, Division of Natural Areas

4:15 pm **"Bamboo as a crop in the Southeast? Current status, questions, and concerns"**
Presenter: Nancy Loewenstein
Extension Specialist with Auburn University School of Forestry and Wildlife Sciences and Alabama Extension

4:45 pm **"Indiana's Statewide Grassroots Approach to Manage Invasive Species and Strengthen Ecosystem Resilience"**
Presenter: Dawn R. Slack
Southern Indiana Land Manager
Chair, Invasive Plant Advisory Committee
Project Coordinator, SICIM's Indiana's Invasive Initiative
The Nature Conservancy, Laconia, IN

Washington B Ballroom

Washington B Ballroom - December 13th, 2018 - 2:30 pm to 5:15 pm

2:30 pm **"Will this project ever be finished? A three-phased approach to the evaluation of invasive plant control projects in Midwestern National Parks"**

Presenter: Craig C. Young

Terrestrial Program Leader (I&M/EPMT)

Jordan Bell, Exotic Plant Project Manager Heartland Inventory and Monitoring Network National Park Service

3:00 pm **"Innovative approaches and opportunities to manage invasive plants collaboratively across boundaries. An inter-agency model partnering at all levels of government."**

Presenter: Curtis Deuser

Supervisory Ecologist/Liaison, Lake Mead Inter-Regional Exotic Plant Management Team, National Park Service, Boulder City, NV

3:30 pm **Exhibitor Break sponsored by Invasive Plant Control, Inc. www.invasiveplantcontrol.com**

3:45 pm **"The Role of Public Gardens in Addressing the Problem of Invasive Plants: Honoring Sarah Reichard's Legacy"**

Presenter: Kayri Havens

Senior Director, Plant Science and Conservation

Chicago Botanic Garden

4:15 pm **"Addressing the grand challenge of invasive arthropod species"**

Presenter: Helen Spafford

Entomological Society of America Science Policy Fellow

University of New Orleans

4:45 pm **"The Witchweed (Striga asiatica) Eradication Program in the Carolinas"**

Presenter: Bridget Lassiter, PhD

North Carolina Department of Agriculture &CS

Washington B Ballroom

Washington B Ballroom - December 13th, 2018 - 2:30 pm to 5:15 pm

5:10 pm	**"Organizing a Weed Wrangle in your State"** *Presenter: Cayce McAlister* *Garden Club of America*
5:20 pm	**"Invasives Free USA"** *Presenter: Steven Manning* *President, Invasive Plant Control, Inc.*
5:40 pm	**"The ABCs of Invasive Species Organizations, Minus One"** *Presenter: Karen Brown* *President, Southeast Exotic Pest Plant Council*
6:00 pm	**Reception at the Water's Edge in the Delta Conservatory Sponsored by Invasive Plant Control, Inc.**

Keynote Session

Washington B Ballroom - December 14th, 2018 - 8:00 am to 9:45 am

8:00 am

"Transitioning from passive to active genetic technology use for invasive species control"
Presenter: Larry Clark, PhD
Director, APHIS
National Wildlife Research Center

8:45 am

Presenter: Dwayne Estes, Ph.D.
Executive Director
Southeastern Grasslands Initiative (SGI)

9:15 am

"Land and Life Lessons for Inner City Youth"
Presenter: Robyn Carlton
Chief Executive Officer
Lookout Mountain Conservancy

9:45 am

Exhibitor Break sponsored by Invasive Plant Control, Inc.
www.invasiveplantcontrol.com

Jackson Ballroom AB

Jackson Ballroom AB - December 14th, 2018 - 10:00 am to 12:30 pm

10:00 am

"Scaling up: Addressing invasive species regionally using partnerships, prioritization, technology, and integration with other management needs."
Presenter: Christopher Evans
Extension Forestry and Research Specialist
University of Illinois, Department of Natural Resources and Environmental Sciences

10:30 am

"IPM for native grass plantings—how Trees Atlanta control weeds and invasives in a type of vegetation that isn't often used in trial testing for herbicides"
Presenter: Brian Williams
Urban Forestry Director, Trees Atlanta

11:00 am **"Development of a Novel Autonomous Aquatic Pesticide Application System"**
Presenter: Robert J. Richardson
Professor and Extension Specialist
Crop and Soil Science Department, North Carolina State University

11:30 am **"Formulation of a Pollinator Site Value Index (PSVI) to measure the benefits of rights-of-way (ROW) habitat change for pollinators (Apis and Bombus) following the management transition from traditional mowing practices to Integrated Vegetation Management (IVM)"**
Presenter: Richard A. Johnstone
President and founder of IVM Partners

12:15 pm **Luncheon sponsored by Invasive Plant Control, Inc. www.invasiveplantcontrol.com located outside of the Presidential Boardrooms**

Jackson CD Ballroom

Jackson CD Ballroom - December 14th, 2018 - 10:00 am to 12:30 pm

10:00 am **"Management of Invasive Giant Applesnail (Pomacea maculata) in the Pascagoula River"**
Presenter: Mike Pursley
Invasive Species Program Manager Office of Coastal Resources Mgmt., Mississippi Department of Marine Resources

10:30 am **"Leverage tools for managing invasive plants"**
Presenter: Curtis Pearce
Uprooter Founder and CEO

10:45 am **"Grazing in Cities: An Overview of the Environmental, Economic, and Social Implications of Grazing Urban Landscapes"**
Presenter: Zach Richardson
Founder of Chew Crew

11:00 am **"Green Climber remote controlled mulching machine"**
Presenter: Mr. Martin J. Halm
President- Green Climber of North America

11:30 am **"The Sherp solution for traversing difficult terrain safely and efficiently"**
Presenter: Todd Olson

Vice President of Business Development
Aquatic Vegetation Control d/b/a All Terrain of Florida

11:45 am **"Herbicide Product Review – "New" Products Available for Invasive Weed Managers & Industry Update"**
Presenter: Charles Smyth
Nutrien Solutions

12:15 pm **Luncheon sponsored by Invasive Plant Control, Inc. www.invasiveplantcontrol.com located outside of the Presidential Boardrooms**

Washington B Ballroom

Washington B Ballroom - December 14th, 2018 - 10:00 am to 12:30 pm

10:00 am **"Going Native – Converting Problematic Landscaping into a Native Botanical Garden at Sequoia Park Zoo"**
Presenter: Gretchen Ziegler
Zoo Director, Sequoia Park Zoo, Eureka, CA

10:30 am **"NAISMA Weed Free Forage and Gravel Certification Program: Supporting Multi-jurisdictional Weed Free Regulations"**
Presenter: Belle Bergner
Executive Director, NAISMA

11:00 am **"Overcoming triclopyr confusion: safety, efficacy, and selectivity issues for applicators."**
Presenter: Stephen F. Enloe
Associate Professor, Agronomy Department/Center for Aquatic and Invasive Plants, University of Florida

11:30 am **"Biocontrol as a critical tool in integrated pest management"**
Presenter: Marc Imlay
Chair, MAIPC Biological Control Working Group
Conservation Biologist, Park Ranger Office, Non-native Invasive Plant Control Coordinator.
Natural and Historical Resources Division
The Maryland-National Capital Park and Planning Commission

12:15 pm **Luncheon sponsored by Invasive Plant Control, Inc. www.invasiveplantcontrol.com located outside of the Presidential Boardrooms**

INNOVATIONS IN TOOLS AND EQUIPMENT FOR ON THE GROUND CONTROL APPLICATIONS

Two Rivers Park - December 14th, 2017 - 1:00 pm to 4:00 pm

Station 1: Backpack Sprayers… Identifying the best backpack sprayer for your needs

Station 2: Using RTV and ATV Dual Reel Sprayers to manage Chinese privet and other mixed invasives

- *Chemical Injection Tools*
- *Large broadcast sprayers*
- *Basal Sprays and Wipes*

Station 3: Stephen F. Enloe

Associate Professor, Agronomy Department/Center for Aquatic and Invasive Plants, University of Florida

Basal Applications- New research and methods for applying basal applications to invasive species

Station 4: Al Royster, Birchmeier

Birchmeier- Demonstration of Birchmeier spray equipment on invasive species

Station 5: Ginger Rose, Executive Director at GROW Enrichment

Educating Children About The Importance Of Invasive Plant Control

Station 6: Vance Brown

Using Chainsaws and brushcutters to manage high intensity multistemmed Invasives

Station 7: Mulching Machines

Station 8: Kayla Lynch, Buckthorn Baggies and other non-chemical control techniques

Station 9: Mr. Martin J. Halm

"Green Climber remote controlled mulching machine"

Station 10: Curtis Pearce, Uprooter Founder and CEO

"Love the Lever: Multiplying the Force Against Invasive Plants"

Station 11: Zach Richardson, Founder of Chew Crew
"Grazing in Cities: An Overview of the Environmental, Economic, and Social Implications of Grazing Urban Landscapes"

Station 12: Todd Olson

"The Sherp solution for traversing difficult terrain safely and efficiently"

Station 13: Mike Berkley

"Restoration after Eradication- Using Native Plants to restore previously non-native forests"

Presenter Abstracts and Biographies
(In Alphabetical Order According to Authors Last Name)

Presenter: Ellen Allen*, South Florida Water Management District, West Palm Beach, FL

"Real-Time Field Data Collection Using Survey 123 for ArcGIS: Applications for Invasive Plant Management Programs"

Amy Peters, South Florida Water Management District, West Palm Beach, FL

Jamie Crandall, South Florida Water Management District, West Palm Beach, FL

Ryan Brown, South Florida Water Management District, West Palm Beach, FL

Abstract

The South Florida Water Management District (SFWMD) manages invasive species on over 1 million acres of natural areas, canals, levees, and lakes. The diverse and highly invasive non-indigenous flora of south Florida presents significant challenges to the SFWMD. Most invasive plant control efforts are implemented by contractors in the vegetation management industry using both ground and aerially-based application methods. Over the last five fiscal years (1 October 2013 – 30 September 2018), the SFWMD has directed contractors to sweep an average of 300,528 acres per year for control of priority aquatic and terrestrial invasive plants. Managing the many projects requires numerous site assessments and contractor inspections to ensure compliance with contract terms, document progress, and ensure compliance with herbicide labels and National Pollutant Discharge Elimination System (NPDES) permit conditions.

Survey 123 for ArcGIS is a data gathering application that allows users to develop custom form-centric surveys with camera and geospatial integration. The SFWMD developed a custom survey and report generation system, which creates an efficient workflow for contractor inspections. Field personnel use smartphones and tablets to document contractor activities using pre-populated dropdown boxes, radio buttons, check boxes, conditional response fields, open response text fields, and capture georeferenced images. Completed forms are transferred to a secure ArcGIS platform. Standardized reporting was achieved with a custom ArcGIS geoprocessing tool and Python script that allows for batch reporting of Survey123 collections directly from the hosted feature service with image attachments. The automated report script utilizes Microsoft Office as a template then saves individual reports as PDF documents. This presentation will provide an overview of Survey 123 and a demonstration of the SFWMD's contractor inspection solution using the application.

Corresponding Author Email: edonlan@sfwmd.gov

Chuck Bargeron

"Citizen science for every generation—Baby Boomers to Generation Z"

Charles T. Bargeron, Associate Director, Center for Invasive Species and Ecosystem Health, University of Georgia

Rachel L. Carroll, and Rebekah D. Wallace
Center for Invasive Species and Ecosystem Health, University of Georgia

Abstract

Citizen science is public participation, as volunteers, in the collection, analysis, and dissemination of science in collaboration with professional scientists. Citizen scientists are nonprofessional scientists who vary in their demographics (e.g., occupation, income, ethnicity, and gender). Generational differences between citizen scientists present unique challenges when promoting projects due to diverging characteristics, views, motivations and perspectives. Therefore, citizen science project coordinators must understand the 1) general characteristics, 2) volunteer characteristics, 3) use of social media platforms, and 4) technology skills or use within each generation when attempting to recruit and retain volunteers. By understanding how to correctly market to specific audiences, a citizen science project can meet both the goals of volunteers (e.g., advance learning, scientific/community volunteerism, etc.) and researchers (e.g., collect high-quality data).

Speaker Bio:

Chuck has been with UGA for 19 years where his work focuses on invasive species and information technology. Websites that he designed have received over 1.7 billion hits since 2002. Recently, Chuck has focused on mapping invasive species and tools for Early Detection and Rapid Response. He has led development of 66 smartphone applications including the first apps for the U.S. Forest Service and National Park Service. He was appointed to the National Invasive Species Advisory Council in 2013 and elected as Chair in 2018.

Presenter: Belle Bergner

"NAISMA Weed Free Forage and Gravel Certification Program: Supporting Multi-jurisdictional Cooperation for Weed Free Regulations"

Executive Director
North American Invasive Species Management Association
2025 N. Lake Drive
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414-967-1350

Abstract

Forage production and gravel pit properties can be large sources of weeds if they are not managed. To address this invasive species pathway, NAISMA has developed the only standards and training program for inspectors of producers of forage, much, and gravel pits in North America. Prevention of invasive species transport in forage, mulch, and gravel can be done quite effectively by training inspectors of production areas how to identify invasive species and follow specific standards of inspection. The WFFG standards provide a guideline to set minimum requirements for uniform participation of the various provinces and states in the program to ensure that forage, mulch, and gravel products are weed-free. The standards are designed to provide some assurance to multi-jurisdictional participants that forage certified through this program meets a minimum acceptable standard; to provide continuity between the various provinces and states in the program; and to limit the spread of federally listed noxious weeds through forage, mulch, and gravel. With currently 30 government partners in the US at the local and state-level and growing, this program is a model for how multi-jurisdictional cooperation can prevent the spread of invasive species.

Speaker Bio

Belle Bergner is the Executive Director of the North American Invasive Species Management Association based in Milwaukee, Wisconsin. NAISMA's programs include Weed Free Forage and Gravel Standards, PlayCleanGo, Mapping Standards, and Online Invasive Species Management Courses. Belle has 15 years of experience in nonprofit management and conference planning. Belle received her BA in Biological Sciences from Mount Holyoke College and her MS in Ecology and Evolution from the University of Pennsylvania with training in environmental management, law and policy. Her masters research focused on the impact of global warming on boreal forests. Prior to receiving her MS, Belle managed ecological research projects in Eastern forests and Midwestern prairie.

Presenter: Mike Berkley

"Cut Back the Cutting! Pocket prairies- A Native Alternative to the Non-Native Lawn"

Co-Owner of GroWild, Inc., Fairview, TN
615-799-1910, www.growildinc.com

Abstract

Speaker Bio

Mike Berkley is co-owner of GroWild, Inc, a native plant nursery and landscape company in Fairview, TN. Growing over 1,000 species and cultivars of native plants, Mike has experimented with all things native in homeowner's yards, state and federal parks, commercial development, land restoration, on roof tops, rain gardens and in his own yard for the past 32 years.

Mike joined the Board of TN-IPC in 2009 as a representative of the nursery industry. His goal is to bring awareness to his fellow nurserymen of the problems invasive plants bring to our environment. Mike is a lifetime member of the TN Native Plant Society and has been the Fairview, TN City Arborist since 2000

Presenter: James L. Burney, Jr.

"The Invasive Plant Management Association (Ipma), A Model For Providing An Economic Voice To Promote State Funding"

President. Invasive Plant Management Association. jburney@avcaquatic.com. (561)719-9484. 1860 W 10th Street, Riviera Beach, Florida, 33404.

Abstract:

In response to the continual challenges facing the funding of invasive plant management operations during each State Legislative Session and the potentially negative influence on Florida's natural resources and those dependent on managing natural lands and waters, the not-for-profit 501(c)(6) advocacy organization, Invasive Plant Management Association (IPMA), was incorporated in 2012. IPMA was organized with the intent to provide the economic impact voice of upland and aquatic invasive plant management during our inaugural 2013 legislative session with the Mission being: "To foster sustained State funding for invasive plant management measures as an integral part of managing Florida's natural lands and waters." The predominantly private sector membership was and is comprised of application contractors, herbicide manufacturers and distributors, and support vendors capable of lobbying without public sector constraints. In 2017-18, the Strategic Outlook remained to foster an ingrained legislative culture of sustainable State funding for invasive plant control through continued representation by the lobbying firm Lewis, Longman, & Walker, PA. Specific goals for the 2018 Legislative Session (FY 2018-2019 Budget) included: Maintaining (or increasing) the Invasive Plant Management Trust Fund; Representing invasive plant management as an integral component of the Land Acquisition Trust Fund; and Continuing discussions for support of dedicated funding for invasive plant management on other State lands (in lieu of Trust money). The purpose of this presentation is to provide an introduction to IPMA, including State Budget successes, to be used as a potential model to organize invasive plant management funding advocacy in other States.

Brief Bio:

James L. Burney, Jr. is the current President of the Invasive Plant Management Association. He earned a BS. Biological Sciences, 1987 and MS. Biological Sciences, 1995, both from University of Central Florida and a Professional Wetland Scientist certification, 1995, from the Society of Wetland Scientists. He is also the current BOD Chair of Aquatic Vegetation Control, Inc. (AVC) with over 34 years' experience managing wildlife and vegetation communities.

Presenter: Robyn Carlton

"Land and Life Lessons for Inner City Youth"

CEO
Lookout Mountain Conservancy

Email: Robyn@lookoutmountainconservancy.org
Telephone: 423.322.8053
Address: PO Box 76, Lookout Mountain, TN 37350

Abstract

This session will focus on connecting inner city youth to the land and using our work with invasive plants to teach life changing lessons.

Invasive species are living life lessons and mirrors the complexities of inner city neighborhoods. Examining the depth and strong hold that root systems have and understanding the right application for change is critical for healing the land and lives. Connecting at risk youth to the land allows everlasting change to lives and family patterns. Uprooting invasive plants and replacing with native plants teaches youth that real change can happen in their lives as well as the land.

Speaker Bio

Robyn received a Bachelor of Arts in Psychology and Education from LaGrange College in LaGrange, Georgia. Later she completed her MEd with an emphasis in psychological counseling at Auburn University. Before coming to Lookout Mountain Conservancy, Robyn started and owned her own bookstore named Inglenook; taught K-12 grade and coached junior and varsity basketball, softball and tennis at LaGrange Academy; and was an adjunct professor at Chattanooga State Community College and Cleveland State Community College.

The majority of Robyn's professional career has been in the area of mental and behavioral healthcare. She held positions in the southeast that allowed her to provide direct counseling, as well as designed, developed and administered mental health programs. Adolescence was her area of concentration.

The greatest gift she received from her mother was when her mother would say, "Go play outside." The outdoors became her safe place; her foundation.

Robyn loves the performing arts and specifically ballet. She danced with the Southern Ballet Company, the Atlanta Ballet Company and traveled with the group, Up With People, performing at the 1972 Olympics in Munich, Germany. After dance, running became a passion and she completed 18 marathons. She has since traded in the ballet and running shoes for hiking shoes and fly fishing.

Robyn has 2 daughters and considers the 18 young men and women from the Intern and Leadership Program her family. Being a good parent is the most rewarding and important responsibility she believes she will ever have. Because of this, her life has forever changed.

Larry Clark, PhD

"Transitioning from passive to active genetic technology use for invasive species control"

Director

USDA/APHIS/Wildlife Services/National Wildlife Research Center

Dr. Larry Clark is the Director of the National Wildlife Research Center (NWRC). Larry has degrees from the University of Maryland (BS), Northern Arizona University (MS), and the University of Pennsylvania (Ph.D.). His post-doctoral experience was as a Public Health Service, National Research Service Award Fellow and as an APHIS Science Fellow. Larry served on the faculty of the basic research institute, the Monell Chemical Senses Center before joining the USDA. Monell is the world's leading research center in chemical sensory biology. Larry's research has focused on the use of plant-derived biopharmaceuticals by wild animals, the study of animal pain perception, molecular modeling of chemical irritants, and the design of animal repellents. Larry has over 160 scientific publications, grants from NIH, NSF, DOD, and private research foundations, and has served as an adjunct faculty at Rutgers University, the University of Pennsylvania, and Colorado State University. Larry is the recipient of the Kerry-Manheimer Award for career achievements in the chemosensory sciences and USDA Secretarial honors for research in methods development resolving human-wildlife conflicts. He serves as the Scientific Integrity Officer and Technology Transfer Officer for the Animal and Plant Health Inspection Service to the USDA. Larry was appointed as the Assistant Director of the NWRC in 2005, and in 2008 was appointed as the Director of the NWRC.

Presenter: Alison Cohan

"Exploring innovative means for feral animal and invasive plant removal in Hawaii"

Director, Maui Nui Forest Program
The Nature Conservancy of Hawaii

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Abstract

In Hawaii, invasive plants and animals can be detrimental to native ecosystems and lead to the degradation of endemic environments. Invasive plants and animals threaten the components and processes of Hawaiian native ecosystems that are home to an abundance of species found nowhere else in the world. The Nature Conservancy of Hawaii (TNCH) takes an "early detection-rapid response" approach toward invasive feral ungulates and high-value target weeds, prioritizing them according to their degree of incipience and potential to modify habitat. TNCH has over 25 years' experience battling feral ungulates using innovative tools and techniques, and has successfully eliminated feral hogs from over 24,000 acres throughout the State. This has proven quite difficult when considering pig population dynamics combined with Hawaii's consistently inclement weather and extreme terrain. We accomplished animal removal while optimizing efficiency and effectiveness by implementing "smart" systems using game camera grid arrays, remote IP wireless remote field networks integrated with HD 360-degree video cameras, unmanned aircraft systems (UAS), and aerial FLIR (Forward Looking InfraRed) scanners to effectively scout, detect, and monitor potential ungulate ingress and movements. We also developed removal technologies and techniques, such as remotely-triggered corral traps, and systematic GPS-enabled hunter-dog sweeps to eradicate pigs from an enclosure. TNCH is experimenting with different innovative methods for priority invasive plant removal, including Herbicide Ballistic Technology (HBT), which involves shooting herbicide pellets at the target weed from a helicopter, and high-precision, low-volume herbicide injection to standing target trees. This presentation will provide a case study of comprehensive ungulate control and specific weed removal projects in Hawai'i, focusing on the applicability of these innovative tools to other landscapes and invasive species.

Speaker Bio

Alison Cohan is the Director for The Nature Conservancy of Hawaii's Maui Nui Forest Program. She has a Master of Applied Science degree in Environmental Policy and Management from the University of Denver with a focus on Natural Resource Management, and a Bachelor's degree in Animal Behavior from Southwestern University. Alison's Master's thesis focused on climate change adaptation of East Maui's montane wet forests. Alison has been involved in conservation activities on Maui for almost 20 years, working for the preservation and conservation of both marine and terrestrial ecosystems. She is currently focused threat abatement across 100,000 acres on East Maui and 50,000 acres on West Maui, leveraging resources through Watershed Partnerships and other strategic collaborations. Originally from Texas but drawn to the ocean at an early age, Alison is happy in nature whether 100' below the surface or 10,000' above.

Presenter: Cheryl Decker

"Novel approaches to invasive plants issues in Zion, Arches and Canyonlands National Parks"

North Coast and Cascades Exotic Plant Management Team Liaison
National Park Service
Cheryl_Decker@nps.gov, 360-854-7336

Abstract
Invasive plants are not unique to National Parks. But National Parks create atypical challenges, both in terms of public use and in various limitations to classic treatments. These constraints present unique barriers to control, but doing nothing is not an option. This presentation will explore cheatgrass/fire issues and treatment tactics in Zion National Park, tamarisk and Russian thistle issues and treatment methods in Canyonlands National Park, and an innovative method for restoring degraded and weed dominated grasslands in Canyonlands and Arches National Park.

Speaker Bio
Cheryl Decker is currently the Liaison for the North Coast and Cascades Exotic Plant Management Team, assisting Mt. Rainier, Olympic, North Cascades, and Lewis and Clark National Parks, San Juan National Historical Park, Ebey's Landing National Historical Reserve, and Lake Chelan and Ross Lake Recreation Areas with their invasive plant issues. She has recently re-located to the Pacific Northwest, having spent 15 years in southern Utah at Zion, Arches, and Canyonlands National Parks as their Vegetation Program Manager, and 5 years prior to that in Yellowstone. While her career has covered many aspects of vegetation management, invasive plant management has been a common theme—and problem--throughout. She has an undergraduate degree in Agriculture from Oregon State University and a graduate degree in Planning and Public Policy with an emphasis on Natural Resource Management from University of Oregon.

Presenter: Curt Deuser

"Innovative approaches and opportunities to manage invasive plants collaboratively across boundaries. An inter-agency model partnering at all levels of government."

Supervisory Ecologist/Liaison

National Park Service, Lake Mead Inter-Regional Exotic Plant Management Team

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Abstract

Innovative approaches and opportunities to manage invasive plants collaboratively across boundaries. An inter-agency model partnering at all levels of government.

Curtis Deuser, Supervisory Ecologist, National Park Service, Lake Mead Inter-Regional Exotic Plant Management Team. curt_deuser@nps.gov, 702-293-8979, 601 NV Way, Boulder City, NV 89005.

Cooperation is a cornerstone for building sustainable invasive plant management programs allowing for expansion across land units and beyond political boundaries. Collaboration is the way to share resources and to capitalize from strengths of each partner. The National Park Service Exotic Plant Management Teams (EPMT) and other professional weed management entities can be the foundation of the bridge to cooperation and collaboration. It is important to build professional capacity of land management agencies weed management programs. Professional weed management teams are a relatively new concept and most have been in existence for less than 20 years. There is a need and demand to further develop this concept beyond its current levels. The Lake Mead Inter-Regional EPMT was established in 1996 becoming a prototype for the EPMT model and has expanded this innovative approach through partnering at all levels of government by providing invasive plant management expertise and services to improve efficiency. The presence of an EPMT with relatively small base funds can grow through cooperation, collaboration, and sheer demand which eventually can become a pivotal foundation on a regional scale.

Speaker Bio

Curtis Deuser is a Supervisory Restoration Ecologist with the National Park Service (NPS) out of Boulder City, Nevada. Curt has a B.S. in Natural Resources Management from Colorado State University and has been with the NPS since 1988. His career has involved development of the Exotic Plant Management Team national program within the NPS and is heavily involved with many interagency partnerships addressing weeds across boundaries on a watershed scale. His expertise in invasive plant management and restoration is leading efforts to advance restoration of native vegetation in riparian systems in the western U.S. He is a leader in the development of best management practices for tamarisk and Russian olive control and has overseen many restoration projects. He has conducted weed control research on numerous species and authored several science publications related to invasive species control and

habitat recovery. Additional career highlights include a month-long tour and technical consultation of invasive plant species in the Republic of South Africa while representing the US NPS in 1999 and a detail with the Weed Science Society of America assisting with coordinating National Invasive Weed Awareness Week and development of a broad coalition of partners against invasive weeds in 2005 based in Washington D.C. His current initiative is to establish and develop a Cooperative Restoration and Weed Management Area for the Lower Colorado River along more than 200 miles in three states (NV, AZ, and CA) from the Hoover Dam to the Mexico border.

Stephen F. Enloe

"Overcoming triclopyr confusion: safety, efficacy, and selectivity issues for applicators."

Associate Professor

Agronomy Department/Center for Aquatic and Invasive Plants, University of Florida

Abstract

Triclopyr is an auxin type herbicide that is widely used for invasive plant control in aquatic and upland systems. Historically, there have been two formulations, an ester and an amine, which have generally separate but occasionally overlapping use patterns. This has resulted in confusion among many land managers on what triclopyr formulation to use. Recent advances in triclopyr technology may exacerbate this issue as two additional triclopyr formulations, an acid and a choline have become available. This talk will help land managers overcome triclopyr formulation confusion and provide clear technical specifications on the similarities, differences, and label use patterns of the four formulations.

Speaker Bio

Dr. Stephen Enloe is an Associate Professor in the Agronomy Department and has been housed at the IFAS Center for Aquatic and Invasive Plants in Gainesville, Florida since 2015. Dr. Enloe earned his Ph.D. in 2002 at the University of California Davis in Plant Biology. He has been involved with invasive plant research and extension for the past 15 years. His research and extension programs are divided between aquatic and upland invasive plant biology, ecology, and management.

Presenter: Dwayne Estes, Ph.D.

"Southeastern Grasslands Initiative (SGI)"

Executive Director
Southeastern Grasslands Initiative (SGI)
Austin Peay State University
Center of Excellence for Field Biology
Clarksville, TN

Abstract

The southeastern U.S. grasslands are imminently threatened. They support approximately half of the rare plant communities, two-thirds of the rare plants, and one-third of the rare terrestrial vertebrates in the region. Several groups of organisms, especially birds and pollinators, are in steep decline due to the loss of grasslands and related open habitats. Yet, in spite of the tremendous needs of these species, it seems that much of the focus on conservation, at least in many parts of the Southeast, is still overwhelmingly devoted to forests, forested wetlands, and streams. The Southeastern Grasslands Initiative (SGI), established in January 2018, is working to elevate the profile of grasslands and grassland-related communities across a 23-state region in an effort to help chart a new course for conservation in the 21st century. SGI has four programmatic priorities: (1) to establish itself as a clearinghouse for information related to the conservation, research, history, and biodiversity of Southern grasslands, and to work with our partners to identify priorities for grasslands conservation and research from local to national scales; (2) to provide leadership in on-the-ground conservation via coordination, education, and outreach; (4) to influence policies and advocate for grassland conservation from local to national levels; and (5) to become a granting organization whereby we plan to offer grants to empower conservation at a scale not presently possible. SGI is currently working with and seeking support from a variety of partners including private philanthropic foundations, corporations, non-profit conservation organizations, and state and federal government agencies.

Speaker Bio

An accomplished professor, Dr. Dwayne Estes, also known as the "Prairie Preacher," works hard to restore native grassland habitats and wildlife species to thriving levels. As such, Estes co-founded (along with Theo Witsell, Little Rock, AR) and serves as the executive director of the Southeastern Grasslands Initiative. In the past several years he has helped secure more than $1 million dollars in funding, including grants from the National Science Foundation. In addition to that role, Estes serves as a full professor of biology at Austin Peay State University, principal investigator for the Center of Excellence for Field Biology, and Curator of the Austin Peay herbarium, a plant museum with 120,000 specimens.

Presenter: Christopher Evans

"Scaling up: Addressing invasive species regionally using partnerships, prioritization, technology, and integration with other management needs"

Extension Forestry and Research Specialist

University of Illinois, Department of Natural Resources and Environmental Sciences

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Abstract

The forests of southern Illinois occur within a complex matrix of private, state, and federal ownership. Contiguous forest blocks are often divided in ownership, creating difficulties in implementing management at the scale necessary for ecological restoration. This ownership matrix also causes challenges when controlling populations of invasive species, which frequently span multiple owners. To address these forest management needs, including invasive species, a partnership has formed between the major land management agencies (state and federal), conservation organizations, and universities. Using collaboration and shared prioritization, partners are able to coordinate efforts to achieve landscape-scale benefits. One vital aspect of this effort is data-sharing. Using ArcGIS Online and the Collector App, project partners designed a series of shared geodatabases, allowing for real-time sharing of geospatial natural resource data and concurrent data collection. This presentation will discuss the evolution of this partnership, the development of shared technology, and the implementation of a landscape-scale project that integrates invasive species control with other forest management needs across ownership boundaries.

Speaker Bio

Christopher Evans is a, Extension Forestry and Research Specialist with the University of Illinois Department of Natural Resources and Environmental Sciences. He has an M.S. in Forest Biology from Iowa State University and a B.S. in Wildlife Biology from Murray State University. Chris serves as the Secretary/Treasurer of the North American Invasive Species Management Association, Associate Editor of the Natural Areas Journal, Technical Advisory Chair of the Illinois Forestry Association, and former Chair of the Illinois Invasive Plant Species Council.

Presenter: Paul Fowler

"The Value of Volunteers in Invasive Species Management"

Volunteer Coordinator, Friends of Warner Parks
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warnerparks.org

Abstract

Harnessing the energy of volunteers can be a fun and effective component of an integrated management plan to educate the public about the threat posed by invasive plants and provide opportunities that combat their spread in our natural areas. Long a mission for the Friends of Warner Parks, I will share the ups and downs of my experience leading these types of stewardship based programs. From scout conservation projects to curriculum-based environmental science laboratories and our everyday weekend warriors, the partnership opportunities can be many and the results impactful when a good plan comes together. Marketing to potential groups, selection of site, matching tools to talent and safety considerations are just some of the components in developing a successful strategy for attack. Each group is different and your tool box will need to be adapted to maximize potential and create positive experiences that can generate impactful results.

Speaker Bio

Paul Fowler is the Volunteer Coordinator for the Friends of Warner Parks. With a B.S. in Recreation and Leisure Services from MTSU, he has served in this role since 2009 after having previously worked as a naturalist at both the Warner Park Nature Center and Beaman Park and seasonal stints at Cedars of Lebanon and Old Stone Fort State Archaeological Park. Engaging with over 3,000 volunteers annually, Friends invests approximately 10,000 volunteer hours in the Warner Parks each year. With removal of invasive plants and restoration of natural areas and riparian buffer zones a major focus of resource management efforts, Paul oversees a wide variety of projects to further the preservation, protection and stewardship of Nashville's largest natural area park.

Presenter: Mark Frey

"The National Capital Region EPMT and a new citizen science EDRR project"

EPMT Liaison
National Park Service
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Abstract
The National Capital Region (NCR) Exotic Plant Management Team (EPMT) serves the 15 national parks in and near Washington DC. There will be an overview of how the NCR EPMT operates and a discussion of an exciting new citizen science project focused on early detection in urban areas. While urban areas pose unique challenges to early detection, they also present unique opportunities. Urban areas and their ports host higher concentrations of invasive species and, with increasing travel and transport, the number of species introduced to urban areas will increase. Along with many invasive species, urban areas contain citizens interested in being citizen scientists and taxonomic experts. Early detection is an effective strategy and citizen scientists are effective data collectors. We present a model called Invader Detectives that harnesses existing data collection by citizen scientists to support early detection in urban areas. The data-driven approach is being implemented as a pilot project in metropolitan Washington DC area but we hope to find partners in urban areas across the country to create a nation-wide network of Invader Detective chapters.

Speaker Bio
Mark has managed the Exotic Plant Management Team (EPMT) for the National Capital Region since 2011. Since 2011 Mark has built partnerships to nearly double the budget for the team. The additional funds have helped improve the efficiency of the team and resulted in more support for NCR parks. In 2013-2014 Mark served for 120 days as the NPS Invasive Plant Program Manager where he oversaw the 17 EPMTs and was the bureau's point person on invasive plants. In 2016 Mark served for 90 days as the Chief of Natural and Cultural Resources for Mount Rainier National Park. In 2017 Mark served for 6 months as Project Director for the National Invasive Species Council. Before moving to NCR Mark managed the Presidio Trust's habitat restoration program in San Francisco. That program was supported by 40,000 volunteer hours a year and included planting up to 100,000 native plants per year grown in the Presidio Native Plant Nursery. The Presidio is cultural landmark district with rare plant communities, wetlands, endangered species, hazardous waste sites, and significant cultural and natural resources. Mark received a bachelor's degree from Oberlin College and a Master's degree from Ohio State University.

Presenters: Judith Fulton, Jil Swearingen, Chuck Bargeron

Mid-Atlantic Invaders Tool:
A New Information Portal for Invasives in the Mid-Atlantic States

Judy Fulton
Ecological, Native & Invasive Plant Consulting
Baltimore, MD
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Jil Swearingen,
Invasive Species Consultant
In the Weeds
Cheverly MD;410-200-7085

Abstract
The Mid-Atlantic Invaders Tool (MAIT) will be a web-based application for accessing the most current information on all invasive species in the mid-Atlantic region. Existing lists of invasive plant, insect, other animal and pathogen species tend to be static and quickly become out-of-date. MAIT will serve as a reliable, easy-to-use, interactive system that is an effective invasive species information and management tool for a range of individuals and organizations with different levels of expertise.

MAIT is a collaborative effort among various experts and organizations in the mid-Atlantic and at the University of Georgia. The system is being built upon the larger invasive.org database platform, developed and hosted by the University of Georgia Center for Invasive Species and Ecosystem Health (CISEH). MAIT will benefit from being a customized project within the larger invasive.org system, which is national in scope.

To maximize the utility of MAIT, CISEH will increase the functionality of invasive.org to the benefit of all system users. Individuals will have the option to choose more or less data depending on their level of interest or expertise. For example, alternatives will include viewing a default table listing species by taxa, or creating a customized table by selecting from the data elements available in the MAIT database. MAIT is intended to educate and provide vital information to a broad range of individuals and organizations involved with, or concerned about, the management of invasive species affecting or threatening ecosystems, the economy and human health. These constituencies range from land managers, government agencies, educational institutions, and policy-makers to landscape architects and the public.

Sponsors and collaborators include the Maryland Invasive Species Council, the Mid-Atlantic Invasive Plant Council, the Maryland Native Plant Society, the Natural History Society of Maryland, the University of Maryland Extension, the Maryland Department of Agriculture, the Maryland Department of Natural Resources, and the National Germplasm Resources Laboratory of the USDA Agricultural Research Service.

Speaker Bios
Judy's Bio: Judy Fulton is a native and invasive plant consultant in Maryland. She has compiled and now maintains a Mid-Atlantic region list of invasive plants, which is published on the Home & Garden Information Center website of the University of Maryland Extension (UME). As chair of the lists group of the Maryland Invasive Species Council (MISC), she is implementing the Mid-Atlantic invaders Tool and is working on an expansion of MISC's invasive

species lists of plants, insects, other animals and pathogens. She consults for both individuals and organizations such as UME. Her specialties include the selection of appropriate native plants for specific ecoregions and growing conditions and the control of invasive plants. She also provides recommendations on how degraded properties can be transformed from landscapes dominated by invasives to healthier ecosystems with appropriate native plants. In addition, she teaches plant workshops and classes on invasives, natives and indification for organizations such as UME, the Natural History Society of Maryland and the Irvine Nature Center. She is a University of Maryland Extension Master Gardener, a member of the Maryland Native Plant Society, the Natural History Society of Maryland, the Mid-Atlantic Invasive Plant Council and the Maryland Invasive Species Council. Previously she served on the Baltimore Chapter Board of the Maryland Native Plant Society. Judy was selected as one of Maryland's Top 100 Women in 1998, 2001 and 2004 by the Daily Record, and was inducted into its Circle of Excellence in 2004.

Jil's Bio: Jil is an Invasive Species Consultant in Maryland. She earned a M.S. degree in Biology from George Mason University in 1988 and studied ant-mediated dispersal of seeds of native spring ephemeral wildflowers. In the early 1990s, she started an Exotic Plant Working Group and a 'Weed Busters' volunteer program for the M-NCPPC Montgomery County Park System to engage the public in invasive plant management. She worked for the National Park Service from 1995 to 2017 and chaired the Plant Conservation Alliance's Alien Plant Working Group, created the NPS Weeds Gone Wild website, developed the Weed Busters Handbook and Certification Training program, secured an Exotic Plant Working Group for the National Capital Region, founded the Mid-Atlantic Invasive Plant Council (MAIPC), developed *WeedUS* a database of invasive plants of natural areas in the U.S., and co-developed, with Chuck Bargeron, the Invasive Plant Atlas of the U.S. and the Mid-Atlantic Early Detection Network (MAEDN) phone app for field reporting invasive species. Jil is lead author for the book '*Plant Invaders of Mid-Atlantic Natural Areas,*' first published in 2002 and now in its 5th edition. She is a board member of the Mid-Atlantic Invasive Plant Council, the Maryland Native Plant Society, the National Association of Invasive Plant Councils and the Washington Biologists Field Club.

Speaker: Dickie Hall

"SGHT Habitat Restoration Project - The World's Largest Rodent Eradication"

Project Director

SGHT Habitat Restoration Project

South Georgia Heritage Trust

Abstract

In 2018, the South Georgia Heritage Trust (SGHT) declared the Sub-Antarctic island of South Georgia rodent free for the first time in over 200 years. A globally important nesting site for seabirds, South Georgia also has two endemic bird species which were being pushed towards extinction by the rodent invaders. SGHT, a tiny charity from Scotland, undertook the world's largest rodent eradication to date using helicopters to spread poison bait across this remote island. In a race against the retreat of glaciers which divide the island, SGHT's baiting was completed in three phases between 2011 and 2015. In 2018 an island-wide survey proved South Georgia to be free of rats and mice. Thanks to this mammoth undertaking, the island is now returning to its natural state.

Dickie Hall, SGHT's Habitat Restoration Project Director, will speak about the eradication and the challenges encountered.

Speaker Bio:

Originally from Manchester, Dickie graduated from Salford University with an Environmental Science degree and soon joined the British Antarctic Survey. This launched a ten year career working in Antarctica. Initially employed as terrestrial biologist, he moved into management roles including Base Commander at Rothera and Bird Island, South Georgia. After returning to the UK in 2011 and working for the Scottish Environmental Protection Agency, the draw of the 'South' proved too strong and he gained his first island eradication experience, working as Field Assistant for Phase Two of the South Georgia Heritage Trust's Habitat Restoration project, the world's largest rodent eradication to date.

Dickie returned to South Georgia in 2013, spending a year as BAS Base Commander at King Edward Point, and then rejoining SGHT for Phase 3 of their baiting operations. He was promoted to Deputy and later Project Director which saw him organise Phase 4, the final return to South Georgia to carry out intensive monitoring which demonstrated that the baiting was successful and the island was indeed free of rodents. Dickie believes that the restoration of island habitats is a crucial step towards turning back the tide of man's negative influences on our fragile ecosystems. He also relishes the challenge of tackling projects in demanding environments with complicated logistics. When not working in remote locations Dickie resides in the UK and enjoys running, cycling and exploring the British countryside with his partner Rachel.

Presenter: Mr. Martin J. Halm

"Green Climber Remote-Controlled Slope Mowers"

President- Green Climber of North America

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(708) 354-2171

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Abstract

Green Climber of North America specializes in providing the North American Market with Green Climber Remote-Controlled Slope Mowers, a product of MDB Technologies. Founding members of Green Climber of North America have been successfully selling MDB products since 2012. In 2014 president, Martin Halm established Green Climber of North America when he and founding members decided to create a business dedicated to distributing Green Climber Vegetation Management equipment. Green Climber of North America serves several prestigious private and governmental entities, such as the Illinois Tollway, Marathon Petroleum, IDOT, KDOT, and CALTRANS. Green Climber of North America now focuses on providing their equipment to the Federal Government and its many agencies.

Green Climber of North America is dedicated to meeting the needs of our customers. We have a strong network of dealerships throughout the North American market. We take pride in having an extensive and growing network of knowledgeable and enthusiastic dealers, providing outstanding sales, service and rentals.

Speaker Bio

Marty Halm is a business owner from the suburbs of Chicago. After running a hardscape company since 1991, Marty decided to diversify and formed a relationship with MDB/SRL, an Italian manufacturer of remote control slope mowers, to start Green Climber of North America. After 4 short years and hundreds of demoes Marty and his team are now represented by 30 dealerships throughout the United States and Canada. The growing market and superior technology offered by MDB/SRL has positioned Green Climber of North America as the premier distributor of remote controlled slope technology.

For more information, literature, videos, or to find your nearest dealer please go to: www.greenclimberna.com

Presenter: Kayri Havens

"The Role of Public Gardens in Addressing the Problem of Invasive Plants: Honoring Sarah Reichard's Legacy"

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Abstract
Many invasive species were originally introduced for horticultural purposes, and several continue to be both utilized as landscape plants and profitable for the green industry. This issue was brought to the forefront for public gardens in a series of workshops designed to link experts in ecology and horticulture to prevent plant invasions organized by Sarah Reichard in the early 2000s. These workshops developed voluntary codes of conduct for a variety of stakeholders designed to curb the use and distribution of invasive plant species through self-governance. We will discuss how these codes have been implemented at the Chicago Botanic Garden and how they have shaped our research and curatorial efforts. For instance, deciding how to treat cultivars of invasive plants led to a research project to address how fecundity of cultivars affects potential invasiveness. We modeled the effect of reducing fecundity on population growth rates of invasive species and used the results to determine our cultivar policy. Finally, we will look at how Sarah's leadership has raised awareness about, and curbed the use of, invasive plants in public gardens and beyond.

Speaker Bio

Kayri Havens holds a B.S. and an M.A. in Botany from Southern Illinois University and a Ph.D. in Biology from Indiana University. She spent three years as the Conservation Biologist at Missouri Botanical Garden before joining the Chicago Botanic Garden in April 1997. She is currently the Garden's Senior Director of Ecology and Conservation and Senior Scientist. Her research interests include the effects of climate change on plant species, restoration genetics, pollination networks, ex situ conservation, and invasion biology. She is on the adjunct faculty of Loyola University, Northwestern University, and the University of Illinois-Chicago. She chairs the Non-federal Cooperators Committee of the Plant Conservation Alliance and collaborates with a variety of academic institutions, agencies and stewardship organizations to help improve conservation efforts for plants and plant communities.

Presenters: Andrew Howell[a], Joseph Hunter, Dr. Ramon Leon, and Dr. Rob Richardson

"Evaluation of UAS Innovations for Invasive Terrestrial and Aquatic Plant Detection, Mapping, and Management"

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Abstract
Detecting, mapping, and managing invasive species requires a culmination of monitoring techniques, field observation strategies, and specialized knowledge of weed ecology. The use of remote sensing and photogrammetric systems has provided mangers with important toolsets to aid in the early detection and rapid response of invasive species dynamics found among natural and cultivated systems. However, the economic hindrance and recurrent application of these systems often limits the spatial, temporal, or spectral requirements needed to make timely management decisions. The more recent popularity and affordable growth among unmanned aircraft has generated multiple avenues for researchers and managers to peruse. Small unmanned aerial systems (sUAS) provide a platform for small optical imagers and other remote sensing devices for weed detection with decreased economic, environmental, and radiometric limitations found among larger airborne or satellite sensors. In addition to providing imagery, sUAS provide opportunities to remotely deliver herbicide applications. Understanding the applicability of sUAS platforms established through research is essential for the continual use of remotely sensed data delivered to invasive species managers for prompt field-based decisions and management opportunities. This study describes the use of consumer available sUAS platforms to summarize varying components among aquatic and noncropland environments to map and monitor the spatial abundance of invasive weed species, and the technical requirements required for herbicide delivery. Specifically, this research concentrates on the identification and management of *Berberis thunbergii* in pasture setting, and the detection of a recently discovered federal noxious aquatic species, *Salvinia molesta*, found among several Southeastern waterbodies in 2017.

Presenter Bio
Andrew Howell is a PhD student and graduate research assistant at North Carolina State University in the Department of Crop and Soil Sciences, under the direction of Dr. Rob Richardson. He received his BS in Crop Production, and MS in Crop Science at NC State where he focused on the early detection, mapping, and monitoring of invasive submersed vegetation using traditional sampling regimes, and boat-based remote sensing technologies. For his PhD research, Andrew is currently investigating the utilization of unmanned aerial systems (sUAS) in aquatic and non-cropland vegetation management and how these sUAS platforms will contribute in making prompt and informed management decisions. Andrew's passion is for the outdoors and spends most of his free time in the field or wading the trout streams of Western NC.

Presenter: Mike Ielmini,

"Wild SpotterTM - Mapping Invasives In America's Wild Places: A nationwide program to boost citizen-science volunteer capacity for the National Forest System and beyond!"

National Invasive Species Program Manager

USDA Forest Service, National Forest System Headquarters
Washington, D.C.

Abstract

In partnership with the University of Georgia, Wildlife Forever Inc., and other organizations across the United States, the USDA Forest Service has created a nationwide citizen science volunteer capacity-building program called **Wild SpotterTM** to help in the battle against all aquatic and terrestrial invasive species. **Wild Spotter** helps recruit, train, and empower volunteers to provide critical spatial information on aquatic and terrestrial invasions. The program not only helps the public locate and map aquatic and terrestrial invasive species in Wilderness Areas, Wild & Scenic Rivers, and other wild places across the 193 million-acre National Forest System, **Wild Spotter** also empowers the public, local communities, states, tribes, and many other groups to help tackle invasive species that invade ANY of America's wild places. The **Wild Spotter** program provides customized tools (including a FREE mobile App for Apple and Android devices) that the average citizen volunteer can use in a simple and effective manner. In addition, **Wild Spotter** is unique in that it includes a marketing component to promote numerous collaborations across the landscape, highlights the invasive species work of groups and individuals, raises public awareness about aquatic and terrestrial invasive species, and couples public and private data sources into a seamless system. By helping to build local capacity and citizen involvement **Wild Spotter** has become an easy way for the Forest Service to boost it's work against invasive species across every National Forest and Grassland – and beyond. The information gathered through **Wild Spotter** is validated by professionals, shared publically, and used to help quantify the extent and impact of targeted invasive species to improve management effectiveness, and ultimately aid in restoring invaded areas to desired conditions. If you want to become a **Wild Spotter** volunteer or partner with the Forest Service, visit the website: www.wildspotter.org . Download the free mobile Apps, and 'Like' us on Facebook.

Speaker Bio

Mike has over 3 decades of landscape-scale conservation experience at local, state and federal levels, and currently serves as the National Invasive Species Program leader for Forest Service in Washington, D.C. Previously, he held several state government positions, and served 15 years with the U.S. Fish and Wildlife Service - including positions on eleven National Wildlife Refuges in 6 states and senior positions in the agency's headquarters. Additionally, Mike works internationally to help overcome challenges related to forest and wildlife conservation, illegal logging and wildlife trade, and invasive species management in Asia, South America, Africa, and across North America.

Presenter: Marc Imlay, PhD,

"Biocontrol as a critical tool in integrated pest management"

Chair, MAIPC Biological Control Working Group
Natural Places Committee Chair, Maryland Sierra Club
Conservation Biologist, Park Ranger Office, Non-native Invasive Plant Control Coordinator.
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Abstract

One of our most productive activities to save our natural areas is to facilitate research that will make host specific biological controls available. Insects that consume the non-native invasive plant species can substitute for the controls where the species came from in the world. Of the 15 top non-native invasive plant species in the mid-Atlantic region three (Purple Loosestrife, Mile-a-minute and Garlic Mustard) now have one or two non-native insects or fungi that feed on them although the permit request for garlic mustard has not been approved yet. They were brought over after being tested for host specificity in Eurasia and then tested in quarantine conditions in the United States. Typically, about 50 such bio-control agents control these species in their native countries so if one or two can control them here that is amazing. In actuality, bio-controls work about half the time reducing the invasive species to about 10% of its former abundance. The problem of bio-controls harming non-target organisms is only about 3% as frequent as before the new rules of proving host specificity went into effect about 20 years ago. Native and indigenous biocontrols are also searched for in the range of the non-native invasive species in America.

Success stories include a native viral pathogen (rose-rosette disease), which is spread by a tiny native mite, Rose-rosette disease, native to the western U.S., that has been spreading eastwardly at a slow pace and is thought to hold the potential for eliminating multiflora rose in areas where it grows in dense patches. Tree of Heaven is an invasive non-native plant and is considered one of the top ten weeds in North America for about 200 years. A law passed in the 19th century makes it illegal to plant it in Washington, DC. A mixture of field and laboratory research shows that native and indigenous biocontrols from the new Southern part of the range are available. The insects consist of Aculops ailanthii and Atteva punctella with various fusarium fungi co-hosts. Here is an example of the need for research for biocontrols; Let's do the same for our invasive Japanese Stiltgrass.: Cheatgrass "has fuelled almost 80% of the largest fires in the west over the last ten years. Researchers are looking at a range of solutions including using a fungus to attack the grass seed."

Presenter: Richard A. Johnstone

"Formulation of a Pollinator Site Value Index (PSVI) to measure the benefits of rights-of-way (ROW) habitat change for pollinators (Apis and Bombus) following the management transition from traditional mowing practices to Integrated Vegetation Management (IVM)"

President and founder of IVM Partners

Abstract

The development of a Pollinator Site Value Index (PSVI) for use in utility right-of-way (ROW) was prompted by the need to quantify the plant community changes following a management regime from traditional cutting-mowing to Integrated Vegetation Management (IVM). This paper describes the methodology of the PSVI and its progression.

Specific pollen and nectar data for the full complement of plant species native to the United States was explored for hymenopteran pollinators, but sufficient data were found in the literature for merely the two genera, *Apis* and *Bombus*, and only for the mid-Atlantic region and a few adjacent states. Thus our objective became to quantify the botanical changes over time in a ROW, using a PSVI based on pollen and nectar values, along with 8 additional metrics, limiting us to the non-native specie, *Apis mellifera* (Western or European honey bee), and the native genus *Bombus sp*. (bumble bees).

Using the PSVI we document the botanical community changes and their relative pollinator benefit that occur on six (6) rights-of-way (ROW) case studies in four states (Maryland, Michigan, North Carolina and Tennessee). A baseline assessment is made following typical ROW maintenance hand and/or mechanical cutting of trees and brush, which is an ecologically disruptive and often erratic cycle, and our research follows the gradual establishment of a more stable and compatible vegetation cover during the implementation of an IVM regime

KEY WORDS: Pollinator Site Value Index (PSVI), pollinators, honey bee, bumble bee, rights-of-way (ROW), FAC-003, Integrated Vegetation Management (IVM).

Speaker Biography

Richard A. Johnstone Rick Johnstone is an Ohio native who serves as President and founder of IVM Partners, Inc., a 501-c-3 non-profit corporation, and Owner of VMES, LLC vegetation management consulting. He conducts vegetation management research and training under IVM Partners and is a liaison between federal, state and tribal land management agencies, electric and natural gas utilities, universities and conservationists. Under VMES he provides utility vegetation management consultation and is an expert witness in litigation. Rick served as System Forester for two Mid-Atlantic electric utilities and is past-President of the Utility Arborist Association and a Registered Professional Forester with a Bachelor Degree in Forest Resources Management from West Virginia University. He has 40 years' experience and is an advisor to the utility industry, wildlife and pollinator conservationists, university researchers and federal, state and tribal land management agencies. Rick and Tess reside in Newark, DE and have four children and two grandchildren.

Presenter: Casey Jones

"Collector tracks invasive species management for ACRES Land Trust"

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Abstract
ESRI's Collector application (app) is used offline, in the field, on iPods and iPads with bluetooth-paired GPS receivers to stream tracks and enter corresponding herbicide application data (amount, time spent, etc.) to document invasive species control efforts. Synchronization allows for different users to view where applications have been done and features are updated regularly for GIS managers to use this data without transferring or converting data.

Speaker Bio
Casey earned a Master of Environmental Science from Taylor University and a Bachelor of Art degree from Manchester College. His work experience includes as a Naturalist Aid with Indiana Department of Natural Resources Division of Fish and Wildlife (2012) a Restoration Ecologist with Heartland Restoration (2013); and as an adjunct instructor at Manchester University, Department of Environmental Studies (2015). Casey's research on Northern Saw-whet Owl migration strategies was published in the Journal of Raptor Research in 2014.

Presenter: Sam King

"The Tennessee State Parks Environmental License Plate; Making Revenue Work for Parks"

Stewardship Ecologist

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Abstract
A look at the successes and struggles of using funds collected by the department of revenue to pursue exotic plant removal and native plantings in Tennessee State Parks. We will talk about competition for funds, project limitations, and the future of the "Iris Fund."

Brief Bio
Sam King works as a stewardship ecologist for the Division of Natural Areas. Prior to working for the division he was a Tennessee State Park Ranger.

Presenter: Bridget Lassiter, PhD

"The Witchweed (Striga asiatica) Eradication Program in the Carolinas"

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Abstract

The witchweed (*Striga asiatica)* eradication program has a long history in North and South Carolina. It is the U.S. Department of Agriculture's oldest and largest quarantine program designed to eradicate and contain the spread of an introduced, regulated weed. The quarantine was officially established on September 6, 1957, with boundaries that included 38 counties in North and South Carolina and an estimated infested acreage of 434,000 acres. The eradication program continues to be supported through a cooperative agreement. In 1995, program responsibilities for managing witchweed in North Carolina were turned over to the North Carolina Department of Agriculture & Consumer Services. Infestations in South Carolina continue to be managed by the USDA APHIS-PPQ. The total acreage of infested fields in both North and South Carolina now total 1,500 acres (99% eradication). The success of the Witchweed Eradication Program in the United States is a tribute to a number of prominent weed scientists who worked from the inception of the program in 1957 until 1995 to understand the parasite/host relationship and developed methods to control it. It is estimated that over $250 million has been spent on the program. Witchweed is an obligate parasite, and a significant pest of corn and other grass crops (rice, sorghum and sugarcane) in Africa. While witchweed only occurs in the U.S. Carolina Coastal Plain, it is a very serious threat to the production of corn and other grain crops in other parts of the country. Estimated yield reductions in the Corn Belt showed an average corn yield reduction of about 35%. Based on a national corn crop of 13 billion bushels at $3.85/bushel ($50 billion), left unchecked, this translates into a potential loss of up to 4.2 billion bushels ($17.5 billion) per year. As the Witchweed Eradication Program is nearing its long term goal of eradicating this parasite from the United States, it is clear that the tools, methods, and approaches that were developed by program scientists played a major role in the success of the effort. The lessons learned about this pest can be translated into control and eradication programs around the world.

Presenters: Deah Lieurance[1], S. Luke Flory[2,]

"A Comprehensive Screening Program To Prevent Introductions And Prioritize Management Of Non-Native Plants And Their Cultivars"

Deah Lieurance[1],, Assistant Extension Scientist, UF/IFAS Center for Aquatic and Invasive Plants, University of Florida; S. Luke Flory[2], Associate Professor, Agronomy Department, University of Florida.

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Abstract

The detrimental ecological and economic effects of non-native invasive plants are especially evident in the natural areas of Florida. Preventing high-risk species from being introduced into natural areas and managing invasive species early in the invasion process can reduce these effects. To identify species most likely to invade and cause damage in natural areas, the University of Florida's Institute of Food and Agricultural Sciences (IFAS) developed the UF/IFAS Assessment of Non-Native Plants in Florida's Natural Areas. The UF/IFAS Assessment utilizes protocols to evaluate the status of non-native species either present in the state or prior to introduction. The UF/IFAS Assessment is composed of three tools: the Status Assessment to evaluate the invasiveness of nonnative species that currently occurs in Florida's natural areas, the Predictive Tool to determine the invasion risk of species that are not currently found in Florida's natural areas but are invasive in other places with similar climate and growing conditions, and the Infraspecific Taxon Protocol to evaluate the invasive potential of horticultural, agricultural selections, hybrids, and cultivars. Approximately 60% of the 880 species evaluated by the IFAS Assessment are considered low risk for invasion or have not escaped into natural areas, 14% are listed as caution species, and 26% are prohibited, invasive, or high risk for invasion in to natural areas. The IFAS Assessment provides reliable, comprehensive recommendations for the use of non-native plant species. Results are accessible through an interactive, searchable website that can be filtered by geographical zone, conclusion type, origin, and growth habit. The IFAS Assessment contributes to management and conservation efforts of our valuable natural resources by helping to reduce the introduction and spread of plant invaders.

Speaker Bio

Deah Lieurance is an Extension Scientist with the University of Florida's Center for Aquatic and Invasive Plants. She has been the coordinator of the UF/IFAS Assessment since 2013. She received her Ph.D. from Wright State University in 2012 and prior to that spent 3 years in Ft. Lauderdale working on the development of biocontrol agents at the USDA Invasive Plant Research Laboratory. Additionally, she currently serves the Florida Exotic Pest Plant Council as the legislative chair and as a member of the Plant List Committee.

Presenter: Dr. William Lester

"The Air Potato Patrol – Teaching IPM through Citizen Science"

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Abstract:

Florida is home to many exotic invasive organisms- everything from plants to insects and even lizards and salt water fish. But one problem plant that many Florida residents are familiar with is *Dioscorea bulbifera*, or the air potato vine. Native to parts of Africa and Asia, this rapidly growing vine has caused environmental problems in landscapes and natural areas alike. This invasive vine is not limited to Florida; it has become a problem in all the Gulf Coast states. In 2011, a leaf beetle native to SE Asia, *Lilioceris cheni*, was released for the first time in Florida as a biological control agent. The beetle began to have a positive impact on the volume of air potato plants in many areas. Many questions remain to be answered by researchers concerning the vine's growth and the distribution (and effects) the beetles are having across the state. To better educate Florida residents about this invasive vine and how to control it, a citizen science project, The Air Potato Patrol, was created. This program was created by Dr. William Lester, UF/IFAS Extension in Hernando County Florida, and Dr. Chris Kerr, Florida Department of Agriculture and Consumer Services (FDACS) and was launched in early June of 2017. Their website, located at https://airpotatobeetle.com/ includes ten educational tutorials on topics such as how to properly identify the air potato vine, some common look-alike plants, and the biology and identification of the air potato leaf beetle. Participants can sign up to become citizen scientists and submit data about the vines growing on their property. Data includes timing of when the vines begin growth in the spring, presence of beetles and, if present, how populous they are. A blog with updates and a forum to ask questions is an important part of the Air Potato Patrol website, giving members a way to communicate with the extension educators and state researchers. During the program's first year, almost 500 individuals became members, the website received 16,000 page views and the ten educational videos have been viewed nearly 4,000 times. A survey sent to measure how the program has impacted members and if it has led to better control overall showed that 83% felt that the videos were very useful, and 88% felt the information helped them with identifying and obtaining the air potato beetle biological control. Approximately 10% of respondents stated that they had youth assisting them in this endeavor, with over 200 children reported to be involved (n=275). Six surveys have been distributed to gather air potato vine and beetle data, with over 1,000 returned. This data has already been used to create more accurate distribution maps of the air potato beetle's presence, which is important in developing new control strategies. Over the summer of 2018, a strong effort will be made to create partnerships with Extension and other agencies in Gulf Coast States to broaden the impact of this program in other areas that are experiencing an air potato problem.

Speaker Bio

Dr. William Lester holds a graduate degree in Plant Medicine from the University of Florida and currently serves as the Urban &Commercial Horticulture Agent II for UF/IFAS Extension in Hernando County, FL. Combining a mix of horticultural knowledge and management skills, his current responsibilities include teaching the public and working closely with county and professional clients. As a frequent guest on radio and writing for local newspapers, his goal is to put complex scientific findings into language that can be understood by school age children and the adult public alike. He has been involved in the creation of multimedia educational materials to support the Hernando County Fertilizer Ordinance, the local Noxious Weed Ordinance and most recently the Air Potato patrol Citizen Science Project in Florida. Protecting Hernando County's fragile Nature Coast ecosystem and reducing the amounts of harmful toxins being placed in the environment are the central goals of his frequent teaching programs. As the coordinator for almost 100 Extension volunteers, Bill believes that education and providing an opportunity to serve residents are the keys to attracting and maintaining a highly motivated group of individuals to work to achieve those goals.

Presenter: Dr. Shiyou Li

"Endocide concept and applications in control of invasive species"

Director, National Center for Pharmaceutical Crops
Arthur Temple College of Forestry and Agriculture
Stephen F. Austin State University
Nacogdoches, TX

Abstract

Our long-term experiments show that none of the 120 randomly selected species representing different groups of plants and animals can avoid autotoxicity by its endogenous metabolites once made available. We coined the term endocides (endogenous biocides) to describe such metabolites that can poison or inhibit the parent via induced biosynthesis or external applications. Endocides are more toxic to the parent species over non-closely-related species. Based on these discoveries, we have developed the technology to control invasive or any unwanted species by selectively eliminating the parent or other individuals of the same species and its relatives by external applications of endocides. The endocide technology could provide a novel, simple, environmental-friendly, and economical method to successfully control noxious invasive species. Its advantages include (1) no addition of any new chemicals to the treated ecosystem; (2) selective control of the target species; and (3) avoidance of the emergence of herbicide-resistance problems.

Brief Biography

Dr. Shiyou Li is research professor and director, National Center for Pharmaceutical Crops, Arthur Temple College of Forestry and Agriculture, Stephen F. Austin State University (SFA), Nacogdoches, Texas, USA. His team has isolated over 2,000 natural products including 186 new compounds from the native and invasive plants. Dr. Li recently discovered the endocidal regulation of secondary metabolites in the producing organisms. His endocides (endogenous biocides) theory provides a novel approach to induce mutations and selectively inhibit growth, development, and reproduction of producing organisms. The application of endocides has led to develop six high-yielding pharmaceutical crop varieties and several other desirable dwarf cultivars of woody and herbaceous plants. Endocide technology has also shown promising potential in controlling invasive species in the greenhouse and field tests of tens of plant and insect species. He is the author or coauthor of four books and 68 articles. He is the inventor or co-inventor of 17 issued or pending patents.

Presenter: Nancy Loewenstein

"Bamboo as a crop in the Southeast? Current status, questions, and concerns"

Extension Specialist with Auburn University School of Forestry and Wildlife Sciences and Alabama Extension

David Coyle, Director, Forest Health and Invasive Species Program, Southern Regional Extension Forestry; Ryan Bean, Natural Resources Agent, Clemson University Cooperative Extension; Deah Lieurance, UF/IFAS Center for Aquatic and Invasive Plants, University of Florida

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Abstract

Interest in growing bamboo as a crop for timber and a variety of other products is on the rise across the Southeast, fueled in part by several bamboo-promoting companies. The majority of the proposed species are monopodial bamboos (i.e., running bamboos). One species that is being promoted in the region, *Phyllostachys edulis*, is a known invader in Japan and the congener of species that are currently spreading in the United States (e.g. *P. aurea*, *P. aureosulcata*). Invasive species specialists in the region have concerns with the widespread planting of these plant species. While running bamboos may be contained with dedicated efforts, with any lapse in efforts the bamboo will run - at which point it can drastically increase in area and extend well beyond original boundaries. Once established, bamboo is notoriously difficult to control. Some groups contend that bamboo is not invasive because many species only seed every 70-120 years and it is unlikely to produce seed while in production. However, seed production is not always the primary mode of dispersal and running bamboos clearly have strong potential to spread vegetatively and escape cultivation. Indeed, risk assessments by the University of Florida IFAS Assessment of Non-native Plants (https://assessment.ifas.ufl.edu/) have determined that several of the species proposed for widespread cultivation are predicted to be a high risk for invasion. We will cover basics of bamboo growth, risk assessments, and options for control and containment. We will also address other questions and concerns about growing bamboo in the Southeast, including potential economic and infrastructure issues. Bottom line, there is little information available about ecological impacts, management techniques, or economic return on investment for these species. We don't know enough about bamboo cultivation to recommend it. If landowners decide to grow bamboo, strong measures should be taken to ensure that growers follow best management practices to contain plantings and that viable options are available for growers who may wish to transition out of bamboo.

Speaker Bio

Nancy Loewenstein is an Extension Specialist with Auburn University School of Forestry and Wildlife Sciences and Alabama Extension. Her Extension efforts focus on invasive plant identification, ecology and control. She also teaches Dendrology (tree identification). Nancy is currently serving as the Executive Director of the Alabama Invasive Plant Council and Chair of the National Association of Invasive Plant Councils. She received a PhD in Physiological Ecology from the University of Missouri, a MS in Forest Biology from Virginia Tech and a BS in Forest Management from Auburn University.

Presenter: Steven Manning

"Invasive Free USA"

President, Invasive Plant Control, Inc. www.invasiveplantcontrol.com
steve@ipc-inc.org, 615-969-1309

Abstract:
Steven Manning will introduce the next step in the successful Weed Wrangle Events. Utilizing some of the successful tools used around the world "Invasive Free USA" is a challenge to all US Land managers to eradicate at least three species from their properties and surrounding areas.

Presenter Bio

Steven Manning has spent the past 25 years working on invasive species. He is founder and President of Invasive Plant Control, Inc. (*IPC). IPC* was created to extend internationally its dedication to the control of invasive species utilizing a revised IPM approach and has successfully controlled hundreds of invasive species for a wide variety of land managers including federal, state, municipal and private landowners throughout the world. Mr. Manning also designs and implements multiple training courses and workshops worldwide with topics ranging from "Invasive Species in Ports of Entry" to "On the Ground Control Techniques." IPC invests heavily in educational and awareness activities annually. Mr. Manning has been an instructor for the USFWS's National Conservation Training Center's Field Techniques for Invasive Plant Management Course for the past ten years. Mr. Manning is also heavily involved with local, state and international industry development projects including Volunteer Based Early Detection Networks. In 2012 IPC introduced a suite of software and web based tools dedicated to environmental needs. Manning is co-author to, Miller, J.H.: Manning, S.; Enloe, S.F. 2010 "A field guide for the management of invasive plants in southern forests" was published by the U.S. Department of Agriculture Forest Service, Southern Research Station. (http://www.srs.fs.usda.gov/pubs/36915 http://wiki.bugwood.org/Invplantmgmt). He is the acting President of the Pacific Northwest Invasive Plant Council Current Vice President of the Mid Atlantic Invasive Plant Council, recent co-chair of the NMFWA's Invasive Species Working Group and serves on the board of the North Carolina Invasive Plant Council.

Cayce McAlister

"Updates on the US Weed Wrangles"

Garden Club of America

Abstract

Weed Wrangle®, a Garden Club of America stewardship program in

communities across the country

In 1992, The Garden Club of America launched a national stewardship program called Partners for Plants. In cooperation with state and federal agencies, Partners for Plants volunteers work to monitor and conserve rare plants, restore native habitats and remove invasive weeds on federal, state and local public lands. Using botanists and other horticultural experts, these programs provide critical assistance to park managers at a time when many public lands lack botanists and other critical resources.

Since the project was launched, Partners for Plants has spawned over 500 projects across the country. One especially successful model is Weed Wrangle®. This project, is a one-day, citywide, volunteer effort to help rescue public parks and green spaces from invasive species through hands-on removal of especially harmful trees, vines and flowering plants while encouraging the replanting of natives. In 2018, Weed Wrangle® partnered with over 110 cities across thirteen states growing from a local effort in Nashville, TN into a sophisticated multi-state volunteer force in only four years.

The Garden Club of America believes that partnerships and community collaborations work and sees Weed Wrangle® as an opportunity to connect volunteers with education, eradication and restoration across the country.

Speaker Bio

Cayce McAlister, Zone IX Chairman, The Garden Club of America, and co-founder, Weed Wrangle®. Founded in 1913, The Garden Club of America is a national leader in conservation, horticulture and historic preservation dedicated to restoring, improving and protecting the environment. To learn more about Partners for Plants, go to, www.gcamerica.

Presenter: Kitty McCracken

"Successful Habitat Restoration Projects on the US DOE Oak Ridge Reservation"Natural

Resources Management Team

Oak Ridge National Laboratory

Oak Ridge, TN

Abstract:

The US Department of Energy Oak Ridge Reservation (ORR) is an approximately 32,000-acre tract of land located in East Tennessee. It is composed mostly of deciduous forest with large blocks of mature interior forest, extensive areas of undisturbed wetlands, open water, riparian vegetation, and many acres of fields. The property also contains 3 developed facilities: Oak Ridge National Laboratory (ORNL), the Y-12 National Nuclear Security Complex, and East Tennessee Technology Park, as well as supporting utility corridors, access roadways, grounds maintenance areas, waste burial grounds, and field research sites. Multiple contractors are responsible for managing portions of the Reservation. This myriad of contractors and land uses introduces challenges. Effective management of invasive plant species, as well as creating native grassland communities and other habitat restoration efforts to support wildlife and pollinators living on the ORR will be discussed.

Speaker Bio:

Kitty McCracken is a member of the ORNL Natural Resources Management Team for the Oak Ridge Reservation in East Tennessee. In this capacity, Kitty leads the invasive plant management program, co-leads efforts to create and maintain native grassland communities for enrichment of pollinator and other wildlife habitats. She leads the bat monitoring program, which involves several federally-listed bat species. She also works with the Aquatic Ecology Group and helps with wildlife issues on the ORR. Kitty is the current president of the Tennessee Invasive Plant Council.

Kitty has worked in various programs at ORNL for 30 years, including the long-term Biological Monitoring and Abatement Program, the Bioindicators Group, and other areas involving water nutrient analyses and remediation of groundwater contamination. Prior to that, she worked as a technician at the University of Tennessee where she received her M.S. degree in zoology. She received her B.A. from Hope College, then went on to work at Indiana University before moving to Tennessee.

Presenter: Brian McDonnell,

"Pesticide Application Manager, A Program for Applicators"

Liaison, Northeast Exotic Plant Management Team.

Abstract:

Pesticide Application Manager (PESTAPPMAN) is a free Windows®-based computer program designed to assist applicators with many common calculations and tasks. It includes mixing calculators for 14 methods of expressing pesticide application instructions, calibration calculators for single spray tip and boom sprayers, a module for converting between products with different amounts of a common active ingredient, a pesticide use log module, and a label and other document archive. The modules performing calculations generate text documents for recordkeeping and data management.

Speaker Bio:

Brian McDonnell has been an employee of the National Park Service for over 30 years. He earned a B.S. degree from Slippery Rock University and an M.S. in Biology from East Stroudsburg University. He joined the Northeast Exotic Plant Management Team in 2003 as the Team Leader, and was promoted to Liaison in 2016. He has been active in the Northeastern Weed Science Society, and is a member of the MA IPC.

Presenter: Isaiah Messerly
"*Managing Invasive Plants in the Upper Midwestern Great Lakes National Parks*"

Liaison/Biologist
National Park Service Great Lakes Exotic Plant Management Team
St. Croix Falls, WI

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Address: 401 North Hamilton Street, Saint Croix Falls, WI, 54024

Abstract
Completing invasive plant management projects over a large geographic region gives the National Park Service's Great Lakes Exotic Plant Management Team several distinct advantages but also represents many unique challenges. The Team utilizes a roving crew model which supports invasive plant management in 11 National Park Units in the States of MN, WI, MI, and IN, and covers over 600,000 acres. Efforts augment larger parks existing efforts while providing smaller park units with options for control. A focus on early detection and rapid response (EDRR) and positive partnerships have been cornerstones for success. Early detection rapid response efforts to control invasive hybrid cattails (*Typha x glauca)* in remote wilderness locations at Isle Royale National Park highlight program success. Bridging the divide between cultural and natural resource management objectives at the Keweenaw National Historical Park have protected valued resources and paved the way for creation of pollinator habitat. This project has also provided valuable knowledge for the control of common tansy (*Tanacetum vulgare*) a species becoming more abundant across northern MN, WI, and MI.

Speaker Bio
Isaiah is currently the Liaison for the National Park Service Great Lakes Exotic Plant Management Team (GL-EPMT) based in St. Croix Falls, WI where he oversees and assists with invasive plant management and restoration project work in a network of 11 National Parks in the states of WI, MN, MI, and IN. Prior to becoming the team's Liaison he worked for nearly a decade as the Field Biologist and Crew Leader for the GL-EPMT. He also gained experience working for the Iowa Integrated Roadside Vegetation Management (IRVM) program and served as an Iowa weed commissioner before coming to the NPS. He earned a BA in General Biology with a focus in restoration and a Master's Degree in Ecosystem Management where he studied natural areas inventory and restoration from the University of Northern Iowa.

Presenter: John Morton, Ph.D.

"Responding rapidly to Elodea - the first freshwater invasive plant in Alaska"

Supervisory Fish & Wildlife Biologist

Kenai National Wildlife Refuge

U.S. Fish and Wildlife Service

Email: **john_m_morton@fws.gov**
Telephone**: 907-260-2815**
Kenai National Wildlife Refuge, P.O. Box 2139, Soldotna, AK 99669

Abstract

Elodea spp.is the first submersed freshwater invasive plant to establish in Alaska. Although initially detected in Cordova in 1982, it was ignored until "rediscovered" in Fairbanks in 2009. Shortly thereafter, Elodea was found in waterbodies in Anchorage (2011), the Kenai Peninsula (2012), and the MatSu Borough (2014). Partners in the Kenai Peninsula Cooperative Weed Management Area (CWMA) were the first in Alaska to apply aquatic herbicides (fluridone, diquat) and the first to report successful eradication, all within three years of initial detection. When two new infestations were found on the Kenai Peninsula in 2017, the CWMA acquired permits and applied first treatments within the same year. At this point in time, all known infestations on the Kenai Peninsula have been eradicated or are in treatment. We attribute the early success of this management partnership to several critical factors: articulating a clear management goal, dedicated interagency project team, eliciting the support of the right experts, an adaptive Integrated Pest Management plan, sustained outreach to generate support, and early recognition that planning, fund raising, and permitting are the hard work (not field aspects of management).

Speaker Bio

Dr. John Morton spent most of three decades with the USFWS straddling the management-research interface as a biologist with Refuges (Kenai, Chesapeake Marshlands, Arctic, Yukon Delta) and Ecological Services (Chesapeake Bay and Pacific Islands Field Offices). He worked to recover endangered birds for many years on the brown-tree-infested island of Guam; managed moist soil impoundments in rural Maryland where introduced nutria, noxious weeds, and resident Canada geese threatened their value to wintering waterfowl; and now struggles to eradicate terrestrial and aquatic invasive plants in a relatively intact Alaskan landscape. He only begrudgingly manages exotic biota, fully recognizing that some do cause real-time injury to ecosystem services but that all will become components of novel assemblages in a rapidly warming climate.

Speaker: Dennis P Niemeyer

“Politics & Policy in Conservation”

Director of NC Green Industry Council
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Saluda, NC 28773
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dennis@ncwildflower.com

Abstract

The political environment is a never-ending battle to stay relevant and taking the environmental conservation topic can be a fiery subject. But even in these political times, gains can be made and victories to be had.

I will address political issues in NC where the NC Plant Conservation Program continues to add plant preserves to the already 24k acres it presently owns & operates. A new 6k acre state forest was opened in 2018 for public use & another nearby 10k acre DuPont state forest was designated the first ‘Recreational’ forest in NC meaning that commercial logging would be prohibited. Funding conservation programs is always a difficult task but patience & planning continue to pay dividends.

On the national political front, the Farm Bill is the line item in the federal budget to supply the specialty markets the $75m per year for USDA & APHIS programs that fund invasive work & other pest problems. Food stamps are located in the Farm Bill making this a contentious topic every 5 years when it needs to be renewed.

Work by American Hort, a national organization of the nursery & greenhouse industries is looking beyond Burning bush & is investing resources to project future invasive plants from coming to market. Stopping the next Burning bush by American Hort & its other partners is the long game of achieving environmental success.

Speaker Bio

Dennis Niemeyer grew up on his families produce farm in Northwestern Ohio & then studied agronomy at The Ohio State Univ.

Professionally Dennis has worked in multiple aspects of the plant production industry for over 40 years. Dennis has worked as a nursery manager @ Studebaker Nurseries in Ohio, and then at BAYER Ag Chem. (Rhone-Poulenc). While at the international based chemical company, Dennis held management positions in sales & marketing working in Ohio, Florida, North Carolina and Canada. He was a partner in WE – DU Nurseries, a mail order nursery where he and his partner sold native & collector plants to plant enthusiast worldwide. Today Dennis represents Carlton Plants in the Southeastern U.S. and owns Magnolia Ridge Farm in the mountains of Western North Carolina where he focuses his growing on native perennials and collector plants from around the world.

Dennis has worked advocating regulators at the local, state and national arenas since the early 1980's. During this time as well, he has and continues to sit on multiple boards of government, plant organizations, and conservation groups. He continues to promote and educate for the use of native plants and conservation as he has for his entire career. Dennis is currently the director of the NC Green Industry Council, an umbrella organization that represents 12 "Green Industry Associations" in North Carolina on Legislative issues.

Dennis is an avid hiker and canoer and lives and gardens on his small farm in the mountains of Western North Carolina.

Presenter: Todd J. Olson
"The Sherp solution for traversing difficult terrain safely and efficiently"

Vice President of Business Development
Aquatic Vegetation Control d/b/a All Terrain of Florida

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561-845-5525 EXT 309
1860 W. 10th Street
Riviera Beach, FL 33404

Abstract
The Sherp is a capable amphibious vehicle that can transport personnel and equipment safely through any terrain. It's metrics include; twenty seven inch ground clearance, thirty MPH on land, four MPH in water, three foot obstacle clearance, two thousand pound payload capacity. The skid steer Sherp is powered by a forty four HP diesel motor and is available in a full body or pickup truck version with a removable rear topper. The Sherp can be used for transporting a crew with hand equipment or up to a one hundred fifty gallon spray rig.

Speaker Bio
Todd Olson holds a Bachelor of Science degree in Fisheries and Wildlife Biology from Iowa State University and has worked in the invasive vegetation management industry for over twenty six years. His experience includes gaining efficient access to difficult terrain and streamlining projects with proper equipment.

Presenter: Curtis Pearce

"Leverage tools for managing invasive plants"

Uprooter Founder and CEO
541-226-9872, TheUprooter.com

Abstract

US Patent holder and manufacturer of Uprooter, Curtis Pearce, will be speaking on the benefits and effectiveness of using mechanical methods in removing invasive plant species. Using leverage tools can multiply your individual strength for success in mechanical removal and reinforce community participation. He'll share his personal experience with organizing a volunteer Weed Wrangle work event in Oregon last spring, engaging community partners to take action against the problem of Scotch broom. Join Curtis on Friday for a field demonstration and uproot some of Nashville's invasives!

Biography

Curtis Pearce, the owner of Uprooter, launched his product in January 2014 following the Weed Wrench opt-out. Having spent 3 years working for Tom Ness at The Weed Wrench Company, he learned what improvements would better meet the needs of customers and developed his patented woody plant pulling tool, the Uprooter. Proud to be the manufacturer of a USA made product, Curtis and his wife build Uprooters to be shipped world-wide. Curtis has worked in the manufacturing industry for over 15 years and holds an Associate Degree in Industrial Welding Technology. Curtis is passionate about educating the community on land stewardship, removing invasive plant species, and restoring native landscapes. He and his wife have enjoyed partnering on local Let's Pull Together events, hosting a Weed Wrangle, and creating the annual Riparian Restoration rafting trip on the Wild & Scenic Rogue River.

Presenter: Jamie Reaser, PhD

"From We Can't to We Can: Creating an Innovation Culture"

Executive Director

National Invasive Species Council

Jamie_reaser@ios.doi.gov
202-208-4113
NISC Secretariat, c/o Dept. of the Interior, Office of the Secretary, 1849 C Street, NW, Washington, DC 20240

Abstract
Invasive species are among the most significant yet least addressed challenges of our time. Our work is undermined by a limiting belief that the problems associated with invasive species are too big, too costly, and too difficult to warrant our attention. This "mythology of impossibility" limits the inspiration, capacity, and will to innovate. It hampers our capacity to address the invasive species challenge. Innovation provides an opportunity to move recognize new possibilities, test options, and establish a new portfolio of effective tools. Innovation enables us to shift the conversation from "we can't" to "we can." Together, we can create the innovation culture necessary to prevent, eradicate, and control invasive species.

Speaker Bio
https://www.doi.gov/invasivespecies/about-nisc-secretariat

Presenter: Robert J. Richardson
"Development of a Novel Autonomous Aquatic Pesticide Application System"

Professor and Extension Specialist
Crop and Soil Science Department, North Carolina State University
rob_richardson@ncsu.edu; 919-515-5653; Box 7620 Williams Hall,
Raleigh, NC 27695-7620

Abstract

Aquatic vegetation surveys and aquatic herbicide applications are integral components of vegetation management programs that protect water resources. However, surveys and herbicide applications can be labor intensive and provide opportunities for introducing cost saving measures. The goal of this project was to design, prototype, and demonstrate a small fleet of autonomous aquatic vehicles (AAVs) capable of detecting, quantifying, and selectively applying herbicide to manage invasive aquatic weed infestations. To date, three AAVs have been developed to evaluate performance, durability, and operational capacity. Field testing of these units has been conducted. Utilization of a trolling motor provided approximately 9x increased thrust over an air propeller and also improved turning radius. Incorporation of a lithium iron phosphate battery significantly reduced weight and increased carrying capacity while also allowing for rapid charging. Autonomous tracking of two AAVs concurrently has been implemented and demonstrated. Successful collection of hydroacoustic data as well as herbicide application through the AAVs has also been verified. Further research is being conducted to optimize the current systems prior to commercialization.

Speaker Bio

Dr. Richardson has responsibilities for aquatic and non-cropland weed science research and extension at North Carolina State University. Rob has been in his current position at NCSU for 12 years and serves on numerous invasive plant advisory committees across the US. He has served as President of the Aquatic Plant Management Society, North Carolina Vegetation Management Association, South Carolina Aquatic Plant Management Society, and North Carolina Weed Science Society. He also currently serves on the Weed Science Society Board of Directors and in the Plant Work Group for the Council for Agricultural Science and Technology.

Presenter: Zach Richardson

"Grazing in Cities: An Overview of the Environmental, Economic, and Social Implications of Grazing Urban Landscapes"

Chief Executive Shepherd and Founder of Nashville Chew Crew, Nashville, TN
Contact Info: zachabides@gmail.com

Abstract

In urban areas across America, there exists an abundance of overgrown, neglected landscapes. This presentation introduces targeted grazing as an urban landscape management tool, and justifies its legitimacy in terms of its environmental, economic, and social implications."

Here's a brief bio:

Speaker Bio

A Nashville native, Zach Richardson received a bachelor's and master's degree in Landscape Architecture at the University of Georgia, focusing on ecological restoration and targeted grazing in urban areas. Following academia, Richardson worked for a reputable grazing operation in Atlanta, Georgia, where he learned the ins-and-outs of working dogs, husbandry, and the logistics of moving hundreds of sheep throughout a large city. In 2016 Richardson moved back home to start the Nashville Chew Crew, an ecologically-sensitive, cost effective, and socially engaging option for landscape management."

Presenter: Zachary Simek

"Eyes in the Sky vs. Boots on the Ground: A Preliminary Evaluation of Small UAS for Terrestrial Invasive Plant Detection and Mapping"

Terrestrial Invasive Species Project Coordinator, The Nature Conservancy
(518) 576-2082
8 Nature Way, Keene Valley, NY 12983
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Abstract
Small unmanned aerial systems (UAS) are emerging as a valuable tool to support a variety of conservation applications. This project evaluated the use of low cost UAS to identify and map infestations of common reed grass (*Phragmites australis)* using three-band (true color) imagery. We examined the effect of seasonal timing and flight elevation on mapping efficiency and accuracy at three reference wetlands. In addition, we compared the ability to detect and quantify previously unmapped infestations of *P. australis* using UAS and ground-based survey techniques. A summary of detection ability and resources expended will be provided.

Speaker Bio
Zachary Simek is the Terrestrial Invasive Species Project Coordinator for The Nature Conservancy's Adirondack Park Invasive Plant Program (APIPP). A graduate of Paul Smiths College with a B.S in Natural Resource Management and Policy, he directs terrestrial invasive species programing throughout the seven-million-acre Adirondack region of upstate New York. Zack is a licensed UAS pilot and serves as a technical advisor for multiple Nature Conservancy drone projects in the northeast.

Speaker: Rod Simmons

"Large-scale Invasive Plant Control Efforts in the City of Alexandria, Virginia"

Natural Resource Manager / Plant Ecologist
Natural Resources Division
Department of Recreation, Parks & Cultural Activities
City of Alexandria, Virginia
2900-A Business Center Drive
Alexandria, VA 22314
office phone: 703.746.4651
mobile phone: 703.930.8972
Rod.Simmons@alexandriava.gov
http://alexandriava.gov/22560

Speaker Bio:

Rod is a plant ecologist who has worked extensively in the fields of natural resource management and ecological restoration for over 25 years. He is a member of the Virginia Botanical Associates; and works closely with the Virginia and Maryland natural heritage programs. He is a member and a past president of the Botanical Society of Washington, a past president of the Maryland Native Plant Society, and serves on the boards of the Maryland and Virginia Native Plant Societies, and is a regular field trip leader for all of these organizations. He is the Natural Resource Manager and Plant Ecologist for the City of Alexandria, Virginia.

Speaker: Bobbi Simpson

"To Be or Knotweed to Be: The Stakeholder Challenge"

Liaison

California Exotic Plant Management Team

National Park Service

Bobbi_Simpson@nps.gov
415/717-0471
1 Bear Valley Rd., Point Reyes NS, Point Reyes, Ca. 94956

Abstract

This presentation will touch on the complex nature of controlling the 10th most invasive plant in the world on the edges of a Salmonid bearing stream. Lagunitas Creek is at the southern end of Coho Salmon range and has been undergoing large scale habitat restoration that is adding extensive disturbance to the already challenging management puzzle. The first observation of Japanese knotweed in Marin County was found in 2011. Concerns about the management bandwidth needed to address extensive and potentially problematic T&E consultations, California NPDES permitting, NEPA compliance and securing the support of over 30 private homeowners have challenged our ability to effectively provide a "rapid response". Collaborative traction is finally happening, and encouraging milestones have been passed, however this 3-legged table is a process based upon determination and optimism that all the parts will come together. Messages that worked or didn't work to foster collaboration will be discussed.

Speaker Bio

Bobbi Simpson has been with the National Park Service for 32 years. She has a degree in Parks Administration and Natural Resources from Clemson University. After working in national parks around the country, in 2002 she moved to west to serve as the Liaison for the California Exotic Plan Management Team. As Liaison, she serves 14 diverse California National Parks – some of which include Yosemite, Redwoods, and Channel Islands National Parks. Her work involves administration of a grant program, management of 2 extensive invasive plant projects at Point Reyes National Seashore, provision of technical assistance to parks, and working with interagency groups on an array of invasive topics. In her off time she enjoys swimming in the bay, hiking the trails by her house, and playing with her two cats.

Speaker: Grant Sizemore

"Domestic cats: The Case for Management and Control"

Director, Invasive Species Programs

American Bird Conservancy

Abstract

Domestic cats (*Felis catus*) have been introduced into new environments worldwide, resulting in widespread ecological damage. As instinctive predators and potential carriers of zoonotic disease, domestic cats are among the world's most harmful invasive species globally. My presentation will consider the conservation implications of domestic cat introductions and management options available to conservation practitioners.

Speaker Bio

Originally from Ohio, Grant grew up fascinated by nature. He earned degrees in Zoology and Environmental Science from Miami University and an M.S. in Wildlife Ecology and Conservation from the University of Florida. Grant has worked toward wildlife conservation in a variety of policy and education roles, including at The Wildlife Society and World Wildlife Fund and now at American Bird Conservancy, where he is the Director of Invasive Species Programs.

Presenter: Dawn Slack

"Indiana's Statewide Grassroots Approach to Manage Invasive Species and Strengthen Ecosystem Resilience"

Southern Indiana Land Manager, and Project Coordinator for the Indiana Invasives Initiative
The Nature Conservancy and Southern Indiana Cooperative Invasives Management Group

Email: dawn.slack@tnc.org
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Address: 8350 State Road 46 East, Nashville, IN 47448

Abstract
Recognizing the essential values and impacts of grassroots efforts, Indiana is focusing on educating, engaging, empowering and collaborating with landowners across the state through a five-year funded partnership to develop cooperative invasive species management areas (CISMAs) for every county to effectively manage invasive species and grow a state-wide partnership to address invasive species and strengthen ecosystem resilience.

Invasive species impact every aspect of our lives, from ecosystem composition, and human health and wellness to national security. Research is increasingly available about the impacts invasive species have, but this information is often elusive to many of the very individuals and entities responsible for the spread of invasive species. Efforts by organizations and individuals that manage invasive species, are often-unrecognized and occur singly – not concerted. In addition, state and federal resources to manage invasive species are limited and often marginally effective. Indiana seeks to resolve some of the apathy, lack of resources, and lack of knowledge about the impact of invasive species through a focus on grassroot development. The overarching goal of this project is to have each county represented by a cooperative invasive species management area (CISMA) in 5-6 years. These CISMAs will focus on education, engagement and empowerment of local citizens and landowners to work collaboratively, and partner with existing state and local entities on invasive species management. Together, we anticipate these county CISMAs and the partnerships developed will elevate the overall knowledge base and management efforts across the state and bring about a landscape scale effort to improve conservation efforts. This session will present the movement towards statewide collaboration and partnership, and new resources available to create resilient natural communities (landowner and neighborhood surveys, Weed Wrangles, native backyard programs, etc.). This session is intended not only for those interested in garnering citizen support for conservation, but also those interested in bolstering overall conservation efforts.

Speaker Bio
Dawn has a bachelor's in Biology from Drury University in Springfield, MO, and a master's in Biology with a focus in plant taxonomy and stream health from Austin Peay State University in Clarksville, TN. She was a professional consulting biologist for many years before holding the Wildlife Science Supervisor position with the IN Department of Natural Resources, Fish and Wildlife Division and her current position, land manager for The Nature Conservancy. She is also Chair for the Indiana Plant Advisory Committee for the Indiana Invasive Species Council and the Project Coordinator for the Indiana Invasives Initiative for the Southern Indiana Cooperative Invasives Management group.

Presenter: Charles E. Smyth

"Herbicide Product Review – "New" Products Available for Invasive Weed Managers & Industry Update"

VM/Aquatics Territory Manager
Nutrien Ag Solutions

Contact information
Charles.Smyth@nutrien.com
(804) 513-7185
1850 Touchstone Road, Colonial Heights, VA 23834

Abstract
Will begin with a condensed evolution of herbicide use to more concentrated formulations (reduction of active ingredients being applied/from gallons to ounces), improving product safety, moving away from petroleum based ingredients & the direction towards more selective products. Will cover the difference between Branded products compared to generic alternatives. Will provide a brief Industry update regarding product manufacturers.

A review of herbicide products that Invasive Weed Vegetation Managers may not be aware of. There have been several recent product additions that are now available to reduce herbicide resistance/tolerance of target invasive weeds while improving worker safety & promoting environmental stewardship. Will also cover improved product formulations of older chemistries & detail certain adjuvants which can enhance product performance.

Will also briefly discuss the recent CA court ruling that implies glyphosate causes cancer. Will provide some supporting information which counters the current negative press that lists glyphosate as a "probable" carcinogen.

The intent of the presentation is to generate discussions to consider utilization of the highlighted products over the traditional use of glyphosate & triclopyr.

Speaker Bio
Graduated from Virginia Tech in 1994 with B.S. degree in Forest Resources Management. Have 24 years of experience working directly with Herbicides & providing vegetation management solutions in a wide variety of markets.
1995 – 2004 (Forestry; Invasive Weed Mgmt)
2004 – present (Industrial Vegetation Mgmt, Aquatics, Invasive Weed Mgmt)
Throughout career, have provided Applicator training for various state recertification needs & licensing requirements. Throughout career, have spoken at numerous trade association events & participated in panel discussions to further educate end users & general public regarding appropriate herbicide use. Past Board of Directors member for North Carolina Vegetation Management Association (2 terms); current Board of Directors member & secretary for Mountain Lake Vegetation Management Council (4 terms).

Presenters:
Una Song
Lead Policy Advisor/Office of Sustainable Environmental Stewardship
US Department of Energy

Beverly Whitehead
Environmental Protection Specialist/Office of Sustainable Environmental Stewardship

Eric Bradley
Environmental Protection Specialist/ Office of Sustainable Environmental Stewardship

U.S. Department of Energy, "Radioactive Tumbleweeds and other Invasive Plant Control Efforts"

Una Song/Lead Policy Advisor/Office of Sustainable Environmental Stewardship (AU-21) Una.song@hq.doe.gov (202) 287-6672
Beverly Whitehead/Environmental Protection Specialist/Office of Sustainable Environmental Stewardship (AU-21), beverly.whitehead@hq.doe.gov (202) 586-6073
Eric Bradley/Environmental Protection Specialist/ Office of Sustainable Environmental Stewardship (AU-21), eric.bradley@hq.doe.gov (202) 586-7301 *U.S. Department of Energy, "Radioactive Tumbleweeds and other Invasive Plant Control Efforts"*

Abstract
The U.S. Department of Energy (DOE) manages approximately 2,213,452 acres of land across 47 locations throughout the United States. DOE's mission is to ensure America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions. DOE's portfolio includes 17 National Laboratories where work is focused on tackling the critical scientific challenges of our time -- from developing transformative energy technologies to discovering the origins of our universe. The Labs possess unique instruments and facilities, many of which are found nowhere else in the world, and employ a multidisciplinary approach towards large scale, complex research and development challenges that place an emphasis on translating basic science to innovation.

The Department has identified approximately 120 invasive plant species on DOE-managed land. DOE's sites address the control and/or eradication of these plants in many ways, based on local circumstances and available resources. DOE establishes and maintains valued collaborations with county, State, and Federal agencies when possible. Presentation topics will include the Russian Thistle which is the most visible of radioactive "biological vectors" at the Hanford Nuclear Reservation along with examples of how sites with limited budgets attempt to control invasive plants. These efforts run the gamut from doing almost nothing to implementing full-scale invasive plant management plans. .

Speaker Bio

Una Song – Ms. Song has experience in management, marketing and sales at Fortune 500 companies and the Federal Government. At the U. S. Department of Energy (DOE), she provides technical assistance for DOE sites and programs to improve the sustainability of their operations. Prior to this role, she managed the Better Communities Alliance, a partnership focused on helping local governments develop and meet energy efficiency, renewable energy and efficient transportation system goals. Prior to DOE, she was at the U.S. Environmental Protection Agency (EPA), where she advised the Office of Strategic Environmental Management (OSEM), Office Director on effective communications strategies for Lean, Program Evaluation and Sustainability and managed the Agency community website.

Presenter: Dr. Helen Spafford (presenter), University of New Orleans

"Addressing the grand challenge of invasive arthropod species"

Authors (listed alphabetically after first author)

Dr. Helen Spafford (presenter), University of New Orleans
Ms Tracy Hueppelsheuser, British Columbia Plant Protection Advisory Council
Dr. Sandy M. Smith, University of Toronto
Mr Chris Stelzig, Entomological Society of America
Dr. Frank Zalom, University of California Davis

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Abstract

Invasive species are one of the most significant threats to food security, human health, infrastructure and natural environments. Their impacts are likely to increase and become more severe with economic development and changing climate. On November 9-10, 2018 an international group of entomologists, researchers, border agents, government and non-government representatives met in Vancouver, British Columbia to discuss the worldwide threat of invasive arthropod species to promote collaboration and concurrence. The summit, "Addressing the North American and Pacific Rim Invasive Insect and Arthropod Species Challenge," sought to develop stronger interagency and international agreement on the core needs and approaches to address the invasive arthropod species challenge. Participants deliberated challenges and solutions for prevention, early detection and rapid response to new invasive species, management of pests and trade, policy and international agreements that could stem the tide. This presentation will deliver the core outcomes and recommendations from the summit in relation to scientific solutions, ways to connect science to communities and develop collaborative partnerships, funding, building capacity and influencing policymakers and legislators.

Speaker Bio

Dr. Helen Spafford is an applied entomologist with interests in biosecurity, invasive species management and biological control. She has conducted pest management research on different approaches and in a variety of systems in Australia and Hawaii. An Entomological Society of America Science Policy Fellow, Helen is currently at the University of New Orleans pursuing a Masters in Public Administration and working at a non-profit organization.

Presenters: Jessica Spencer, Invasive Species Biologist, US Army Corps of Engineers, Jacksonville District and Douglas Swanson, Geographer, US Army Corps of Engineers, Portland District

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"Using Arc Collector to Streamline Invasive Species Data Collection"

Abstract

The ESRI app, Arc Collector was recently approved for use on U.S. Army Corps of Engineers (Corps) mobile devices. The Corps has a number of layers of security which prevent the use of external devices such as cameras and GPS units. Arc Collector allows the user to capture geospatial and photographic data which can be transferred through the Cloud, eliminating the need for time consuming data downloads, labeling and sorting. This presentation will highlight two Arc Collector projects that the Corps developed for invasive species data collection; one for terrestrial ecosystems and one for aquatic ecosystems. The consideration and selection of specific data fields will be discussed. Emphasis will be placed on the importance of collaboration between field biologists and Geographic Information Systems (GIS) experts, to tailor the data fields so that all relevant data is captured.

Speaker Bio

Jessica Spencer, US Army Corps of Engineers, Jacksonville District - Jessica Spencer earned a Bachelor's Degree in Chemistry and Human & Natural Ecology from Emory University and has taken many graduate level courses related to Ecological Restoration with coursework at University of Nevada, Las Vegas, and the University of Florida. She works for the US Army Corps of Engineers, Jacksonville District, where she started with the Regulatory Division in 2008. Now in the Invasive Species Management Branch, she is the lead biologist for invasive species management on Dredged Material Management Areas (DMMAs).

As an Invasive Species Biologist, Ms. Spencer has participated in biological control efforts, facilitated restoration projects, developed management plans for control, containment and prevention of invasive species and coordinated interagency efforts to control invasives. She routinely partners with other federal, state and local agencies to address invasive fish, snails, reptiles, mammals and plants and contributed to interagency efforts to develop an Early Detection Rapid Response Decision Framework for the Greater Everglades area.

Prior to her experience at the Corps of Engineers, Ms. Spencer worked at Lake Mead National Recreation Area for five years, conducting invasive and rare plant surveys and associated land management activities. She worked to organize and implement a "Weed Sentry" invasive species mapping and control program for all of the federal land management agencies (US Fish and Wildlife, US Forest Service, Bureau of Land Management and National Park Service) in the Las Vegas area. Her achievements also include the implementation of a buffer zone creation project to prevent the spread of invasive fountain grass along the shores of Lake Mojave. Her

career has also included conducting vegetation surveys and research for the US Geological Survey and Sequoia National Park.

Ms. Spencer currently holds a Pesticide Applicator License from the Florida Department of Agriculture and Consumer Services and is an active member of the Florida Native Plant Society, Florida Exotic Pest Plant Council, Florida Aquatic Plant Management Society, Southeast Exotic Pest Plant Council, Everglades Cooperative Invasive Species Management Area and the First Coast Invasive Working Group.

Douglas Swanson - Douglas Swanson is a Geographer for the US Army Corps of Engineers (USACE) Portland District and a registered Geographic Information Systems Professional (GISP) since 2005. Working daily with Geographic Information Systems (GIS) Mr. Swanson supports all facets of planning, engineering, construction and operations. He conducts all phases of geospatial and cartographic activities, from initial planning, estimating and procedure development to the accomplishment of all production and dissemination.

Mr. Swanson is a USACE Emergency Response GIS Cadre Team Leader and has been an active team member since 2001, providing GIS support while deployed to nine national disasters, including Hurricane Katrina and the historic Florida hurricanes of 2004. As Team Lead he is responsible for coordinating with key emergency response players, keeping abreast of GIS issues and manpower needs and preparing his team of Subject Matter Experts for potential deployment.

Mr. Swanson received the Superior Civilian Service Medal and the Secretary of Defense Medal for the Global War on Terrorism for GIS and mapping support to Operation Iraqi Freedom while deployed to Kuwait and Iraq in 2003. He is US Air Force Veteran with nine years active duty as a Signals Intelligence Analyst and received the Joint Service Commendation Medal. He has recently completed a Graduate Certificate in GIS at Portland State University and can be reached at doug.c.swanson@usace.army.mil

Presenter: Professor Dan Tompkins

"Predator Free New Zealand"

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Abstract

In 2016, the New Zealand government announced a national goal of eradicating introduced predatory mammals critically threatening native biodiversity (brushtail possums, rats and stoats) from the country by 2050. The goal was subsequently adopted as a lead commitment of the 'Honolulu Challenge on Invasive Species' launched by the International Union for Conservation of Nature (IUCN). Four interim 2025 goals were established to drive momentum towards the goal: (i) suppress predators on a further 1 million hectares; (ii) eradicate predators from blocks of at least 20,000 hectares without the use of fences; (iii) eradicate predators from island nature reserves; (iv) achieve a breakthrough science solution capable of eradicating at least one small mammal predator.

Predator Free 2050 Limited was formed to coordinate partnership approaches to large landscape projects and breakthrough science. It aims to supercharge local and regional efforts to scale up predator suppression and eradication, working closely with community groups and regional and city councils, and to focus research efforts to achieve a breakthrough science solution capable of eradicating at least one small mammal predator by 2025. The company's first tranche of projects will enable over $100 million of predator control and eradication operations. These are being implemented in rural provincial landscapes, major cities, inhabited islands and forests. The company is required to attract co-funding at a ratio of 2:1 and has exceeded this target, in large part through the support of regional councils and philanthropic trusts which have embraced the PF2050 mission.

The peer-reviewed science strategy for PF2050 Ltd was constructed with the aim of complementing existing research efforts to give the best chance of achieving the 2025 science goal. PF2050 Ltd is now investing across four research programmes: 'Environment and Society' is exploring social and cultural views on predator eradication; 'Best Use of Existing Approaches' is testing whether currently employed tools and approaches can eradicate at the landscape scale; 'Exploring New Approaches' is addressing knowledge gaps regarding risk, benefit and the technical feasibility of new genetic approaches, to enable an informed consideration of their potential; 'Computer Modelling' is developing shared tools that all communities and agencies contributing to PF2050 can use to design, monitor and improve predator management for their goals and environment.

The need for the PF2050 programme was driven home by the NZ Parliamentary Commissioner for the Environment's report 'Taonga of an Island Nation: Saving New Zealand's Birds'. This report, released in 2017, highlighted the fact that over 80% of native bird populations are in decline, primarily due to the impacts of introduced predators. Public support to address this issue is high; a 2017 survey reported that 84% of Wellingtonians support ridding NZ's capital of such predators and 69% are willing to be actively involved.

Speaker Bio

Dan Tompkins leads the science strategy for Predator Free 2050, New Zealand's initiative to eradicate invasive predators for the benefit of native biodiversity, as the Project Manager Science Strategy of Predator Free 2050 Ltd. Dan is an Honorary Professor at the University of Otago, New Zealand, and member of the International Union for Conservation of Nature (IUCN) Task Force on Synthetic Biology and Biodiversity Conservation. An ecologist and epidemiologist by training, with degrees from Cambridge University and the University of Oxford, Dan's past research includes: exploring novel high-tech approaches to pest control (including the 'Trojan Female Technique' approach to fertility control); understanding the interactions among species in the New Zealand mammal pest community; demonstrating the efficacy of oral BCG vaccination for TB control in brushtail possums; and demonstrating the role of shared diseases in native species declines.

Presenter: Brian Williams

"IPM for Native Grasses and Wildflowers: Controlling Invasives, Weeds, and Brush"

Urban Forestry Director, Trees Atlanta

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Abstract

Native grasses and wildflowers present unique challenges to the vegetation management professional. Put those stands of grasses and forbs into an urban or suburban context and you increase the challenge. Trees Atlanta has put considerable effort into finding and developing efficient, effective tactics for controlling weeds, invasive plants, and brush in these landscapes when prescribed fire is not an option. Techniques covered will include manual control, chemical control, and planting strategies.

Brief Bio

Brian Williams is Urban Forestry Director at Trees Atlanta and project manager for the Atlanta Beltline Arboretum. He is a graduate of Emory University and holds professional certifications in arboriculture, erosion control, and vegetation management.

Presenter: Rob Williams

"Using Environmental DNA (eDNA) and Underwater Video as an early detection tools for invasive fish in Four Eastern Lake Ontario Tributaries"

Invasive Species Program Coordinator/Conservation Practitioner

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Abstract

By convention, early detection of aquatic invasive species typically relies on visual observation of the species. Unfortunately, by the time a species is visually observed, the ecosystem impacts are underway. Genuine early detection means detecting the presence of a species before it populates and causes irreplaceable harm to the ecosystem of concern. This project utilizes environmental DNA or (eDNA) as a tool for the early detection of invasive fish within Eastern Lake Ontario. Focus areas include downstream and upstream sites at four "key" tributaries of Eastern Lake Ontario using species specific genetic analysis. Taqman assay markers used on this project are mitochondrial cytochrome c oxidase 1 gene extracted from tissue samples taken from target fish samples. Cornell University (Casey Lab) designed the qPCR primers and probes, tested these on tissue DNA's and on eDNA collected from contaminated waters. 160 water samples have been tested for six (6) invasive fish species and two (2) native species. Additionally, underwater video is used as a surveillance technique to capture aquatic animals. The overall objective is to determine if eDNA and underwater video can be used as a *practical* early detection tools for invasive fish.

Speaker Bio

Rob is educated as a freshwater biologist (Brockport State University) and has experience in working with invasive species, water quality assessments, Nonpoint source pollution abatement, natural resource management and strategic planning. Rob is one of the co-founders of the Finger Lakes – Lake Ontario Watershed Protection Alliance and co-founder of the North Coast Initiative, a.k.a. Lake Ontario Coastal Initiative. Rob's professional experience includes work with The Nature Conservancy, New York State Soil and Water Conservation Districts and New York State Sea Grant Extension. He has received over $4 million in project funding from the US-Environmental Protection Agency, United State Department of Agriculture, New York State Environmental Protection Fund and private funding for work on water resources, nonpoint source pollution and invasive species. Currently Rob holds two titles; one as a Conservation Practitioner for the Central & Western New York Chapter of The Nature Conservancy and another as the Invasive Species Program Coordinator of the SLELO-PRISM (St. Lawrence Eastern Lake Ontario Partnership for Regional Invasive Species Management). Rob also serves on the New York State Invasive Species Advisory Committee and various other Technical Working Groups.

Presenter: Becca Winston

"Spatial Invasive Infestation And Prioirty Analysis (Siipa) Tool In Eddmaps"

Project Designer, MIA Consulting[1]

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Abstract
Invasive plants in Southeastern forestlands can greatly interfere with forest health, conservation and management goals. Invasive plants compete with and overwhelm native plant populations which can affect timber productivity, hydrology, wildlife, and prescribed burn plans on a forest. Treatment plans for invasive plants must be prioritized and strictly maintained for both short and long-term strategies. Prioritizing invasive plant treatments for private and government-owned lands is variable depending on data, tools and staffing. Developing a web-based decision support tool would help establish a systematic method on ranking invasive plant populations for treatment according to a land manager's goals.

The Spatial Invasive Infestation and Priority Analysis (SIIPA) model was based off the prioritization system found in 'The Nature Conservancy's (TNC) Draft Weed Management Plan', which uses four characteristics (Habitat Quality, Available Control Methods, Impacts of the species, and Extent). The SIIPA model was designed to apply a customized prioritization framework to all known invasives within an area of interest, allowing the manager to prioritize not just different species, but individual populations within a species and across different species. The original model works with ESRI's ArcGIS software, but has been adapted to work in a web map application to increase availability to a wider audience.

The Spatial Invasive Infestation and Priority Analysis (SIIPA) tool's web map version is designed to use data from the Early Detection Distribution and Mapping System (EDDMapS) and apply a prioritization framework to the data, with the goal of assisting property owners, land managers and project managers with designing a treatment plan for their invasive plant populations. The web map version uses the main four characteristics but still allows for customization in how those characteristics are prioritized. The SIIPA web map version will hopefully provide land managers with an adaptable, easy-to-utilize decision support tool for making critical prioritization choices.

Speaker Bio
Becca Winston and her business partner Rachel Winston, formed the company MIA Consulting out of a growing need for comprehensive solutions to environmental data collection, management, and education. Together they have developed GIS solutions and educational resources for many different entities across the United States. Becca's primary focus is developing web-based solutions that bridge the gap between end users and complicated software. She has successfully created many GIS solutions for land managers that enable them to take advantage of easy-to-use tools. She works closely with EDDMapS and is constantly looking for ways to better utilize their GIS data.

Presenter: Craig C. Young

"Will this project ever be finished? Site-scale effectiveness of long-term (>5 year) invasive plant control projects in Midwestern National Parks"

Craig Young, vegetation program leader, Heartland I&M Network, National Park Service
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Jordan Bell, exotic plant project manager, Heartland I&M Network, National Park Service
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Abstract

Once resource managers have selected an important project, monitoring data are critical for evaluating a project through its life-cycle. We use a three-phase framework, start-continue-optimize, to focus our monitoring questions during each project phase. During the start phase, our monitoring evaluates the time and cost needed to begin the project. In most cases, previous data and experience provide us general estimates of these factors, but data allow us to check our assumptions. For example, we estimated a rate of 0.22 acres per person-day for felling densely grown Eastern redcedar (*Juniperus virginiana*). As a project continues, we shift our focus to the evaluation of control effectiveness over time. Control of two very different species, tree-of-heaven (*Ailanthus altissima*) and the annual Japanese stiltgrass (*Microstegium vimineum*), has led to relatively steady decreases in cover over time, although not local eradication over 8 and 4 years, respectively. Garlic mustard control efforts, on the other hand, have yielded less consistently promising results. These data inform our decisions to continue projects, helping us to guard against sunk cost decision bias. For projects that we continue, data allow us to better optimize our project and, as a consequence, our portfolio. This is especially important as we have found that search time often constitutes the greatest portion of project costs. In such cases, decreasing the re-visit frequency at a point of diminishing returns can optimize the effort-results equation. At this point in our program, we can only use professional judgement to estimate the duration of this point of diminishing returns without treatment due to factors such as reproductive mode, reproductive capacity, and propagule bank longevity. Long-term monitoring provides the data to verify or alter these judgements. As an example, in controlling autumn olive (*Elaeagnus umbellata*) with a 4-year return interval, we appeared to sustain progress in reducing plant cover.

Speaker Bio

Craig Young serves as a biologist and vegetation program leader for the Heartland I&M Network, which provides long-term monitoring for 15 national parks. In this capacity, Craig manages or supervises projects to monitor invasive plants, plant communities, wetlands, and the rare Missouri bladderpod. Craig also oversees the Heartland Exotic Plant Management Team, which is dedicated to managing invasive plants across those same parks. Prior to beginning work with the National Park Service in 2003, Craig worked with Virginia's Natural Heritage Program as a natural areas manager and with The Nature Conservancy of Georgia as an ecologist. Craig received a B.S. in Biology from Centre College an M.S. in Environmental Forest Biology with a concentration in Plant Ecology from the State University of New York's College of Environmental Science and Forestry.

Speaker Bio

Jordan Bell serves as a biologist and project manager for the Heartland Exotic Plant Management Team, located at Wilson's Creek National Battlefield near Republic, Missouri. He is responsible for planning, compliance, implementation, and assessment of invasive plant control and restoration projects in 9 national parks. Jordan began his work with the team in 2010 as a Student Conservation Association intern following graduation from College of the Ozarks with a B.S. in biology. Jordan has completed a graduate certificate in restoration ecology through the University of Idaho.

Presenter: Gretchen Ziegler

"Going Native – Converting Problematic Landscaping into a Native Botanical Garden at Sequoia Park Zoo"

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Abstract
Sequoia Park Zoo is one of the smallest zoos accredited by the Association of Zoos & Aquariums, and is situated on 5 acres amongst coast redwoods near Humboldt Bay in Northwest California. In 2017 the Zoo embarked on a new idea to convert the landscaping of the entire zoo footprint to mostly native plants. Our approach to landscaping had historically been haphazard until an epiphany about the link between native plants and biodiversity revealed a simple but brilliant connection to the Zoo's mission of inspiring the conservation of nature. An unexpected grant kicked the initiative into gear and the first year into the implementation has been transformative indeed. This presentation shares the story of the spark, the framework, the implementaion and the learning moments so far.

Speaker Bio:
Gretchen Ziegler has over 30 years' experience working at various zoos around the country, starting at her hometown zoo in Topeka, Kansas. She received a B.S. in Biology at Kansas State University, but managed to avoid any study of botany whatsoever, believing it was all about the animals. Once she started to garden, she realized her foolish error. She completed a master gardener's course and a botany identification workshop through the California Native Plant Society, and is now a native plant and invasives-control advocate, as well as the Director of Sequoia Park Zoo in Eureka, California, where she has lived and worked since 1995.

Poster Presentations

"A Brief History of the Aquatic Invasive Species Program for the Keweenaw Bay Indian Community, a Sovereign Nation Assisting in Modern Management of the Resources of Lake Superior."

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The Keweenaw Bay Indian Community (KBIC) is located in the western Upper Peninsula of Michigan, and is the successor in interest of the L'Anse and Ontonagon Bands of Lake Superior Chippewa Indians, signatories to the 1842 Treaty with the Chippewa, and the 1854 Treaty with the Chippewa. Several sections of our Integrated Resource Management Plan (IRMP; adopted February 12, 2003) mention the importance of control and management of Aquatic Invasive Species (AIS) in the Lake Superior Region. Although the KBIC Natural Resources Department (KBIC-NRD) has been working hard to address various AIS challenges for many years, we were heavily understaffed and underfunded until recent funding support provided through the Great Lakes Restoration Initiative (GLRI; Grants to support implementation of Tribal AIS management plans) allowed the development of an AIS Program with full and part time staff dedicated to AIS issues. Since 2015, the KBIC-NRD AIS Program has utilized these funds to assist multiple agencies, including the U.S. Fish and Wildlife Service (USFWS), in conducting Lake Superior Basin-Wide and standardized early detection protocols for AIS, in performing various levels of education and outreach to KBIC members and Non-Native American Communities of the Lake Superior Region regarding AIS control and management, and in developing and implementing various ways in which to monitor the impacts of AIS on vital natural resources of the Lake Superior region. This poster is intended to disseminate the progression of the KBIC-NRD AIS Program.

“Comparing Species Composition and Diversity of Mesic Pine Flatwoods and Adjacent Former Pasture”

Ashley Berniche, Student at Florida Southern College

Abstract

Pine flatwoods represent the largest terrestrial ecosystem in Florida. Human disturbance has led to a decrease in intact pine flatwoods ecosystems due to fire suppression and the introduction of non-native species. This has resulted in a loss of the high biodiversity usually seen in pine flatwoods. Colt Creek State Park in Lakeland, Florida represents a pine flatwood that is comparatively untouched by human activity. This study investigates the presence of native and non-native plant species in a pine flatwood habitat and an adjacent disturbed area that was one a pasture. The objective of this study is to determine whether invasive species are colonizing the intact pine flatwoods ecosystems and if the presence of non-native species has an effect on the biodiversity of both sites. Understanding how the pine flatwoods are affected by non-native species will give better insight into more effective conservation methods and aid in preventing the spread of invasive species.

“U.S. Geological Survey's Nonindigenous Aquatic Species Program”

Ian Pfingsten

Botanist, Cherokee Nation Technology contracted to U.S. Geological Survey

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Abstract

The U.S. Geological Survey’s Nonindigenous Aquatic Species (NAS; https://nas.er.usgs.gov/) database is the national repository for spatially referenced biogeographic accounts of introduced freshwater and some marine species. The program tracks the distribution of >1,330 nonindigenous species across the United States (contiguous US, Alaska, Hawaii, and US territories), and contains over half a million spatially-referenced and expert verified biogeographic records. Each record within the database represents an individual observation of a nonindigenous aquatic species in the wild or documented release/introduction. Information is accessed by choosing one of many potential queries or by choosing a taxonomic group of interest (mammals, reptiles, amphibians, fish, bryozoans, coelenterates, crustaceans, mollusks, or plants). From here a user can obtain information on distribution (including maps), access species profiles, perform spatial queries, or access sighting location information. The NAS program also has an alert system that provides a framework for the rapid dissemination of new invasions as they are incorporated into the NAS database. The system notifies registered users of new sightings as part of a national early detection/rapid response system.

Brief Biography

Ian has spent three years with the Nonindigenous Aquatic Species program working with aquatic plants. He previously worked in Orange County, FL lakes collecting water quality data for the Environmental Protection Division in between spending time in Oregon and Florida monitoring rare plant populations.

“West Virginia Invasive Plants and Their Native Look Alikes”

Anne M. Wakeford
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Abstract

Invasive plants are becoming a significant problem in the State of West Virginia. Invasive plants threaten ecosystems by aggressively outcompeting native vegetation. This “take over” by invasive plants frequently results in limited food and habitat for native wildlife. Therefore, it is important to know the similarities and differences between invasive species and their native look alikes in order to prevent their spread, and thus control them. The purpose of this poster is to show differences and similarities between some of the common West Virginia invasive plants and their native look alikes.

Speaker Bio

Anne Wakeford has been a Coordination Biologist with the WVDNR for more than 5 years. She is responsible for evaluating the impacts of highways projects to fish, wildlife, and their habitats and reviewing In Lieu Fee projects and Mitigation Banks in the southern part of the state. Recently she has given presentations on invasive plant species to the West Virginia Conservation Agency, WVDNR and West Virginia Division of Highways. Before working with the WVDNR Anne was a marine fisheries biologist and worked throughout the country on a variety of fish species. Her university education includes: a B.S. in Biology from the University of Exeter in England, a M.S. in Marine Biology from the University of Wales, and a M.A. in Marine Affairs and Policy from the University of Miami, Florida.

“EmpowerU: Empowering Citizens to Engage Decision Makers in Invasive Species Management Issues”

Authors: Jessica Warren, University of Georgia Camden County Extension Coordinator and Agriculture and Natural Resources Agent; Angela Gupta, University of Minnesota Extension Professor Forestry & Beth Kallestad, University of Minnesota Extension Educator, Leadership & Civic Engagement

Jessica Warren
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Abstract:
Woodland landowners, volunteers and resource managers have asked the University of Minnesota Extension for information and education about how to engage in larger management and policy level decisions on invasive species issues, in addition to knowledge about how to manage invasive species. In response UMN Extension is developing advanced training for woodland owners, Master Naturalists, lakeshore property owners and others concerned about terrestrial and Aquatic Invasive Species (AIS). The training builds skills, confidence and knowledge to engage decision-makers (e.g., resource managers and elected officials) in productive conversations that can impact decision-making about invasive species. This project is seen as a first step in an ongoing series of advanced training to further build community capacity to engage with resource managers, elected officials and other members of communities on issues that affect natural resources

The poster will focus on the innovative collaboration betten Extension natural resource and civic engagement professionals. Project objectives are to transfer knowledge, empower confidence and competence in program participants to meaningfully engage decision makers at many geographic and organizational levels about invasive species issues. This project is multi-state and being developed for easy transferability via a flipped classroom, online learning and normative approach to education including 360 images using

Funding for the project comes from a grant through the Renewable Resource Extension Act (RREA) Focus Funds. University of Minnesota project partners include: Michigan State University, Oregon State University, University of Arizona, University of Florida, University of Georgia, University of Wisconsin, and Virginia Tech University.

Speaker/Author Bio:
Jessica Warren serves as the University of Georgia Agriculture and Natural Resources Agent and County Extension Coordinator for Camden County. Jessica has a Bachelor’s of Science in Forest Resources with a concentration in Wildlife and a Master’s of Natural Resources with a focus on Conservation Education, both from the University of Georgia. Her previous work experience includes working for the University of Tennessee’s Tree Improvement Program as a Research Associate funded by a National Science Foundation grant, teaching Environmental Science and Natural Resources in the Georgia Governor’s Honors Program, and a graduate assistantship at Athens-Clarke County Public Utilities creating and implementing a county-wide K-12 water conservation education program and curriculum.

Innovative approaches and opportunities to manage invasive plants collaboratively across boundaries. An inter-agency model partnering at all levels of government.

Curtis Deuser, Supervisory Ecologist, National Park Service, Lake Mead Inter-Regional Exotic Plant Management Team. curt_deuser@nps.gov, 702-293-8979, 601 NV Way, Boulder City, NV 89005.

Cooperation is a cornerstone for building sustainable invasive plant management programs allowing for expansion across land units and beyond political boundaries. Collaboration is the way to share resources and to capitalize from strengths of each partner. The National Park Service Exotic Plant Management Teams (EPMT) and other professional weed management entities can be the foundation of the bridge to cooperation and collaboration. It is important to build professional capacity of land management agencies weed management programs. Professional weed management teams are a relatively new concept and most have been in existence for less than 20 years. There is a need and demand to further develop this concept beyond its current levels. The Lake Mead Inter-Regional EPMT was established in 1996 becoming a prototype for the EPMT model and has expanded this innovative approach through partnering at all levels of government by providing invasive plant management expertise and services to improve efficiency. The presence of an EPMT with relatively small base funds can grow through cooperation, collaboration, and sheer demand which eventually can become a pivotal foundation on a regional scale.

Speaker/Author Bio:
Curtis Deuser is a Supervisory Restoration Ecologist with the National Park Service (NPS) out of Boulder City, Nevada. Curt has a B.S. in Natural Resources Management from Colorado State University and has been with the NPS since 1988. His career has involved development of the Exotic Plant Management Team national program within the NPS and is heavily involved with many interagency partnerships addressing weeds across boundaries on a watershed scale. His expertise in invasive plant management and restoration is leading efforts to advance restoration of native vegetation in riparian systems in the western U.S. He is a leader in the development of best management practices for tamarisk and Russian olive control and has overseen many restoration projects. He has conducted weed control research on numerous species and authored several science publications related to invasive species control and habitat recovery. Additional career highlights include a month long tour and technical consultation of invasive plant species in the Republic of South Africa while representing the US NPS in 1999 and a detail with the Weed Science Society of America assisting with coordinating National Invasive Weed Awareness Week and development of a broad coalition of partners against invasive weeds in 2005 based in Washington D.C. His current initiative is to establish and develop a Cooperative Restoration and Weed Management Area for the Lower Colorado River along more than 200 miles in three states (NV, AZ, and CA) from the Hoover Dam to the Mexico border.

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Partners and Hosts

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National Military Fish and Wildlife Invasive Species Working Group

The Invasive Species Working Group (ISWG) was formed in 2001 to address the impacts of invasive species on U.S. military lands and waters. The WG is devoted to the management of natural ecosystems through the study and transfer of information relative to invasive plant and animal species. The Goals of the ISMG are to: Facilitate communication and information exchange among members of the National Military Fish & Wildlife Association (NMFWA) interested in Invasive plant and animal species, enhance knowledge and technical capabilities of Department of Defense (DOD) natural resources professionals in the area of Invasive species management and Increase awareness and appreciation within DOD of Invasive species management issues, decision-making processes, and funding avenues. http://www.nmfwa.net/index.php/working_groups/invasive_species

https://www.eddmaps.org/

EDDMapS – Invasive Species Mapping Made Easy

EDDMapS is a web-based mapping system for documenting invasive species distribution. It is fast, easy to use and doesn't require Geographic Information Systems experience. Launched in 2005 by the Center for Invasive Species and Ecosystem Health at the University of Georgia, it was originally designed as a tool for state Exotic Pest Plant Councils to develop more complete distribution data of invasive species.

EDDMapS goal is to maximize the effectiveness and accessibility of the immense numbers of invasive species observations recorded each year. As of November 2018, EDDMapS has over 4.5 million records.

EDDMapS combines data from other databases and organizations as well as volunteer observations to create a national network of invasive species distribution data that is shared with educators, land managers, conservation biologists, and beyond. This data will become the foundation for a better understanding of invasive species distribution around the world.

https://www.bugwood.org/

UGA Bugwood Center for Invasive Species and Ecosystem Health

Utilizing partnerships and information technology to advance invasive species management, integrated pest management and forest health

The Tennessee Exotic Pest Plant Council was established March 12, 1994 in Nashville at the first annual Tennessee Exotic Pest Plant Symposium with assistance and support from similar organizations in California and Florida. TN-IPC's role is to raise public awareness about the spread of invasive exotic plants into Tennessee's natural areas, facilitate the exchange of information concerning management and control of invasive exotic plants, provide a forum for all interested parties to participate in meetings, workshops, and an annual symposium, and to share the benefits from information provided by TN-IPC, serve as educational, advisory, and technical support on all aspects of invasive exotics and initiate campaign actions to prevent further invasive plant introductions. http://tnipc.org/

The mission of the Southeast Exotic Pest Plant Council is to support the management of invasive exotic plants in natural areas of the Southeast U.S. by providing a forum for the exchange of scientific, educational and technical information. The Southeast Exotic Pest Plant Council is a non-profit organization and is not a regulatory agency. https://www.se-eppc.org/

GROW Enrichment is a registered 501c3 non-profit organization based in Nashville, TN with a focus on community development through urban agricultural and nature conservation education. We offer ongoing instruction for home schooled-students, workshops for the general public, support programs for local public schools, and nature-based summer day camp opportunities. We also offer opportunities for citizens to engage in volunteerism through a variety of projects we manage.

http://www.growenrichment.org/

Promoting effective management of invasive plants in natural areas and wildlands, the National Association of Invasive Plant Councils (NAIPC) is a coalition of state and regional Exotic Pest Plant Councils (EPPCs) and Invasive Plant Councils (IPCs) representing professional natural resource managers, scientists and others with an interest in invasive plant management. Through this website, NAIPC also serves as a contact hub for multi-agency state invasive species councils, cooperative Weed Management Areas (CWMAs) and Cooperative Invasive Species Management Areas (CISMAs) and other partnerships based on collaborative management of invasive plants. https://www.na-ipc.org/

NISC

NATIONAL INVASIVE SPECIES COUNCIL
SECRETARIAT

https://www.doi.gov/invasivespecies

The National Invasive Species Council (NISC) Secretariat provides the guidance and support necessary for the Council to undertake its duties. It serves as the primary point of contact for the Council, provides scientific and technical advice to NISC members, works to ensure effective communication and collaboration across Federal Departments/Agencies and among Federal inter-agency bodies, coordinates interdepartmental planning processes and project implementation, manages ISAC and its subcommittees, develops and coordinates implementation of the NISC Management Plan, oversees the NISC website, and reports on NISC accomplishments. The Secretariat is located within the Office of the Secretary at the U.S. Department of the Interior.

MID-ATLANTIC INVASIVE PLANT COUNCIL

https://www.maipc.org/

The Mid-Atlantic Invasive Plant Council (MAIPC), previously known as the Mid-Atlantic Exotic Pest Plant Council (MA-EPPC), was established in 2000. Council representation includes federal, state and local government agencies, non-governmental organizations, industry, academia, and individuals from Delaware, Maryland, New Jersey, Pennsylvania, Virginia, West Virginia and the District of Columbia.

MAIPC provides regional leadership to effectively address the threat of invasive plants to the native flora, fauna, and natural habitats of the Mid-Atlantic. The council coordinates regional efforts to gather and share information on the identification, management and prevention of invasive species, provide training and volunteer opportunities and to identify research needs.

https://wildspotter.org/

Wild Spotter – Mapping Invasive Species in America's Wild Places

Wild Spotter aims to build citizen science volunteer capacity to protect America's wild places from harmful invasive plants, vertebrates, invertebrates, microbes, algae, and fungi that outcompete our nation's native species and threaten the biodiversity and health of every aquatic and terrestrial ecosystem.

Wild Spotter helps you identify, map, and report invasive species found in your favorite wild places. The data you collect will help create the first-ever nationwide inventory of invasive species in America's natural areas. You can help us fight back against harmful invaders by becoming a Wild Spotter volunteer or partner. By downloading the FREE Wild Spotter Mobile App on your smartphone, you can quickly and easily collect vital data on these invasions: location, extent, and impact - all while you are enjoying the great outdoors.

Weed Wrangle®, is a one-day, citywide, volunteer effort to help rescue our public parks and green spaces from invasive species through hands-on removal of especially harmful trees, vines and flowering plants. Typical unwelcome plants are honeysuckle (Lonicera japonica and L. maackii), Chinese privet (Ligustrum sinense), winter creeper (Euonymus fortunei), autumn olive (Elaeagnus umbellata var. parviflora), English ivy (Hedera helix) and kudzu (Pueraria montana var. lobata).

Supervised by an experts in invasive weed management, Weed Wrangle®-volunteers will learn, practice, and begin a habit of maintaining an area free of invasive plants and encourage replanting with natives in removal areas. By engaging our neighbors and challenging them to take action in their own spaces, we hope to create a movement that will have the greatest impact on the invasive plant population.

www.weedwrangle.org

Patron Sponsor

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Steven Manning
6811 Highway 70S
Nashville, TN 37221
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Table Exhibitors

Distributor / Manufacturer of effective & efficient spray systems for invasive species control and eradication. We provide economical and labor saving method of chemical application. The low friction hose combined with remote controlled reels allow you to spray up to 600' from the vehicle for a very effective application from one vehicle parking.

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Visit vegetationmanagement.com for more information including a complete list of land management solutions from Corteva Agriscience™.

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Green Climber of North America specializes in providing the North American Market with Green Climber Remote-Controlled Slope Mowers, a product of MDB Technologies. Founding members of Green Climber of North America have been successfully selling MDB products since 2012. In 2014 president, Martin Halm established Green Climber of North America when he and founding members decided to create a business dedicated to distributing Green Climber Vegetation Management equipment. Green Climber of North America serves several prestigious private and governmental entities, such as the Illinois Tollway, Marathon Petroleum, IDOT, KDOT, and CALTRANS. Green Climber of North America now focuses on providing their equipment to the Federal Government and its many agencies.
Green Climber of North America is dedicated to meeting the needs of our customers. We have a strong network of dealerships throughout the North American market. We take pride in having an extensive and growing network of knowledgeable and enthusiastic dealers, providing outstanding sales, service and rentals.

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"I ordered some Birchmeier sprayers a few years ago. It was a turning point for our team. The Birchmeier sprayers don't leak and they produce excellent, easily adjustable spray patterns. As a result, we use less herbicide and save time. Also, the Birchmeier sprayers are much better built than our previous sprayers, so we no longer have to send broken, leaky sprayers to the landfill each year." **Excerpt from a testimonial from John Berry, Friends of Great Swamp National Wildlife Refuge in New Jersey.**

For over 140 years Birchmeier has manufactured equipment for professionals working to manage Invasive Species. Below are a few examples:

Classic backpack sprayer - Iris 15k (#109-600-01)
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The North American Invasive Species Management Association (NAISMA) is a 26-year-old, nonprofit organization dedicated to supporting a continent-wide network of land managers, water resource managers, state, regional, and federal agency directors and staff, and nonprofit organizations who manage, research, or provide education and outreach about invasive species. NAISMA's members are a diverse group of individuals who are involved in implementing invasive species management programs at all geographic scales and across public-private boundaries. Our mission is to support, promote, and empower invasive species prevention and management on land and water and across all habitats in North America. Our vision is to have North America's lands and waters protected from invasive species.

NAISMA's programs aim to provide the support, training, and international standards needed by the professional invasive species management community including (1) Weed Free Forage and Gravel Standards and Training; (2) Mapping Standards; (3) PlayCleanGo Outreach Campaign; (4) Online Invasive Species Management Training Program; and (5) Annual Conference.

Visit our exhibit table to grab some resources to take back with you and learn more at www.naisma.org.

Belle Bergner
Executive Director
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As the world's largest provider of crop inputs and services, Nutrien plays a critical role in **Feeding the Future** by helping growers to increase food production in a sustainable manner. We'll keep innovating, because it's essential for achieving shared success with our customers, investors and other stakeholders that rely on the long-term success of our business.

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Pure Air Natives, Inc., provides native seed and plants for ecological restoration, habitat creation, and preservation efforts throughout the Midwest.

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CP Designs, Inc. DBA Uprooter is a small, Oregon-based manufacturer that makes Uprooter products - leverage tools used for pulling out woody plants. We build Uprooter and Uprooter Mini from start to finish and sell directly to the public via our online store. We source our materials and supplies from other U.S. companies and local businesses. In addition, we are passionate about educating the community on land conservation, removing invasive plant species, and restoring native landscapes. We strive to continue building our partnerships on local land management projects and pesticide-free plant removal programs understanding that those relationships are an important piece of the larger effort within the national stewardship community.

https://www.theuprooter.com/

Dana Pearce
Vice President
TheUprooter.com
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We are accepting abstracts for 2019 now. If you are interested please send your abstract to Steven Manning at steve@ipc.us.com

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