



# *Delaware Invasive Species Council's*

## SOCIETY PAPERS

**Tuesday, October 22, 2024**

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EXTRAORDINARY PESTS. EXTRAORDINARY NEWS

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**Chair** – Benjamin Schlusser, *Brandywine Conservancy*

**Vice Chair** – Leah Brooks, *Mt. Cuba Center*

**Secretary** – Elaine Schmerling, *Village of Ardentown*

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**Small Grants Administration Chair**

Mike Steiger, *DNREC, Division of Fish & Wildlife*

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Blake Moore, *University of Delaware Cooperative Extension*

Joe Thomas, *Kendal Crosslands*

Ann Burrus, *Educator, retired*

<b>2024 DISC Annual Meeting Agenda</b>	
8:30	<b>Registration &amp; Networking</b>
9:00	<b>Welcome and Opening Remarks</b> <i>Benjamin Schlusser, Brandywine Conservancy, DISC Chair</i>
9:20	<b>Potential Plant Invaders of Delaware</b> <i>Bill McAvoy, DNREC Division of Fish and Wildlife</i>
9:40	<b>Beech Leaf Disease in Delaware</b> <i>Bill Seybold, Delaware Forest Service</i>
10:00	<b>Small Grant: Eradication of Black Fountain Grass</b> <i>Marva Joy Dansberry, Champion's Club at Johnathan's Landing</i>
10:20	<b>Break</b>
10:30	<b>Native Alternatives to Invasive Ornamental Plants in the Landscape</b> <i>Leah Brooks, Mt. Cuba Center</i>
11:30	<b>Developing Plant Pathogenic BioControl Agents for Mid-Atlantic Invasive Weeds</b> <i>Mike Fulcher, US Department of Agriculture, Agricultural Research Service</i>
11:50	<b>Small Grant: Reseeding a Disturbed Forest Floor</b> <i>Mike Czupryna, Judge Morris Environmental Stewardship Team</i>
12:00	<b>Lunch</b>
1:00	<b>Business Meeting</b> <i>Benjamin Schlusser, Brandywine Conservancy, DISC Chair</i>
1:30	<b>Flathead Catfish in Lum's Pond</b> <i>Mike Steiger, DNREC Division of Fish and Wildlife</i>
1:50	<b>On Tick Invasions in the Northeast U.S.</b> <i>Jacob Walls, DNREC Division of Fish and Wildlife</i>
2:10	<b>Small Grant: Invasive Plant Control in Delaware Wildlands' Taylors Bridge Complex</b> <i>Brigham Whitman, Delaware Wildlands</i>
2:30	<b>Social Hour and Apple Picking</b>



## **Abstracts and Presenter Biographies**

### **Potential Plant Invaders of Delaware**

***Bill McAvoy, DNREC Division of Fish and Wildlife***

There is a great diversity of non-native, invasive plants in the states that surround Delaware (PA, MD, NJ, VA), and many of these species have the potential to invade and naturalize in the state. This presentation examines those species that have the potential to become established in Delaware in the future and discusses their life histories which could affect management and control decisions.

Bill McAvoy is the chief botanist for Delaware Department of Natural Resources and Environmental. He is the primary authority regarding plant biodiversity in the state of Delaware. He has held this position for over 30 years and has extensively studied the native and non-native flora of the state, with an emphasis on threatened and endangered species.

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### **Beech Leaf Disease in Delaware**

***Bill Seybold, Delaware Forest Service***

Beech Leaf Disease (BLD) is an emerging threat to American beech and other beech species in North America. It is caused by a microscopic worm, or nematode: *Litylenchus crenatae ssp. mccannii*. BLD was initially detected in the Cleveland, Ohio area in 2012. First detected in Delaware in 2023 in northern New Castle County, it is a rapidly spreading disease that is the second major threat to American beech after the introduction of Beech bark disease in the 1890's in Nova Scotia. Damage to the future leaf is done by nematodes in the over-wintering bud. Although high mortality of beech saplings and understory is already observed in infected stands, the full picture on mature tree mortality rates and possible genetic resistance in North American beech is still developing. A handful of pesticide and fertilizer treatment options are being studied as options primarily for landscape trees.

After growing up on a tree farm in southeastern Wisconsin, Bill Seybold received a B.S. in Botany from the University of Wisconsin in 1989 and an M.S. in Forestry (forest management and economics) from the University of Minnesota in 1996. He served in the Peace Corps as an agroforestry extension agent in Paraguay from 1997 to 1999. Arriving in Delaware in late 2006, he worked as a service forester for New Castle and Kent Counties and became the forest health specialist in 2013. His current work primarily involves aerial and ground surveying and pheromone trapping for invasive forest pests such as Asian longhorned beetle, Emerald ash borer, and walnut twig beetle.

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### **Small Grant: Eradication of Black Fountain Grass**

***Marva Joy Dansberry, Champion's Club at Johnathan's Landing***

Resident senior citizen volunteers worked to eradicate black fountain grass, *Cenchrus purpurascens*, from one portion of the community's 19-plus acre South Greenway. The

Greenway, now a Conservation area, was transformed from an executive golf course. In 2022, volunteers cut off and bagged hundreds of bottle brush blooms, then sprayed herbicide on plants. The 2023 DISC Grant allowed the Greenway committee to buy supplies to do multiple sprayings on the grass (AquaNeat herbicide, surfactant, dye, sprayers, etc.). The committee also obtained donated trees to plant in this sunny area. First, volunteers cleared the area of invasive trees and shrubs, then planted the donated trees, and then finally sprayed black fountain grass covering an area approximately 55 x 75 yards from June through the fall. Today, only a small amount of black fountain grass is seen on the perimeter of the grant area. Although better, the invasive plant battle continues on other South Greenway areas.

Since 2023, Marva Joy Dansberry has been the Co-chair of the Greenway Development Committee. She joined the committee in 2018 after moving into the 55+ community Champions' Club at Jonathan's Landing. Prior to moving to Delaware, she lived in Smith Mountain Lake, Virginia where she worked at a Garden Center until being diagnosed with Pancreatic cancer. Before Virginia, Marva and her husband lived in Ewing, NJ where she taught Family Life and Physical Education to disabled students while raising three sons. Much of what she does today on the Greenway Development Committee is from hours researching various invasive plants, attending workshops, and asking questions of area experts.

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### **Native Alternatives to Invasive Ornamental Plants in the Landscape**

***Leah Brooks, Mt. Cuba Center***

Non-native invasive plants, like Japanese barberry and English ivy, damage our environment by invading natural areas and outcompeting native plants. To help stop the spread, the Delaware state legislature passed a law that banned the sale of 30+ invasive plant species. Join Leah Brooks as she presents native alternatives to invasive ornamentals and explains how making these substitutions helps protect our ecosystems.

Leah Brooks is Mt. Cuba's Public Programs Coordinator and Vice Chair of DISC. She graduated from the University of Delaware with dual bachelor's degrees in Environmental Science and Wildlife Ecology. Her passion is sharing the joy of nature and native gardening with others, and she's an avid contributor to the Delaware Native Plant Identification and Exchange group on Facebook.

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### **Developing Plant Pathogenic BioControl Agents for Mid-Atlantic Invasive Weeds**

***Mike Fulcher, US Department of Agriculture Agricultural Research Service***

Plant pathogens can be used to safely and effectively control invasive weed species. Fungi and bacteria have been collected from target weeds in the Mid-Atlantic region on an ongoing basis since 2021. These microbes undergo preliminary screening for biological control activity, and candidate agents are identified for further evaluation of efficacy and environmental safety. Currently, pathogens are being evaluated for use against perilla mint, garlic mustard, alligator weed, fig buttercup, and knotweed. A fungal pathogen infecting perilla mint has progressed to field trials and was found to cause high mortality in perilla,

resulting in increased plant diversity and greater groundcover of competing species. Continued research at sites in Maryland aims to understand the long-term impact of redistributing this pathogen.

Dr. Mike Fulcher is a research plant pathologist working on the development of microbial weed biological control agents at the USDA-ARS Foreign Disease-Weed Science Research Unit on Fort Detrick in Frederick, Maryland. His research interests include the use of foreign and endemic plant pathogens to control weeds, the ecology of weed microbiomes, and the connections between crop and weed pathogen populations.

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**Small Grant: Reseeding a Disturbed Forest Floor**

*Mike Czupryna, Judge Morris Environmental Stewardship Team*

Organized efforts to clear non-native invasive plants at the Judge Morris section of White Clay Creek State Park have been ongoing for over eight years. The work has evolved from pruning multiflora rose along trail edges to full-scale removal of invasive plants and, when possible, introducing native trees and shrubs throughout the area.

When invasives are removed, soil is disturbed. Sowing native herbaceous seeds in these areas was considered, but the additional burden on volunteers and budget was untenable. A 2023 University of Delaware study outlined efforts to do exactly this. That study was the impetus to apply for a DISC grant to study reseeded cleared forest floor in exclosed and adjacent unexclosed plots.

Appropriate native herbaceous seeds were selected, three sets of plots were identified, and in February 2024, the ground was prepared and seeds sown. An interim report of the concept, progress to date, and future analytical plans will be presented.

A retired pharmaceutical development professional, Mike has been involved in volunteerism and activism in White Clay Creek State Park and elsewhere since retirement. Living in the Pike Creek area for over 20 years has provided him many opportunities to help the local environment. As a New Castle County Master Gardener and avid vegetable and native plant gardener, Mike takes efforts to improve the environmental conditions in White Clay and elsewhere seriously.

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**Flathead Catfish in Lum's Pond**

*Mike Steiger, DNREC Division of Fish and Wildlife*

Flathead Catfish, *Pylodictis olivaris*, are predatory catfish native to the Mississippi and Ohio river drainages. They are particularly damaging to fish populations as they switch to eating primarily other fish at four inches in length. A single catch in 2020 during a Largemouth Bass fishing tournament in Lums Pond is the first confirmed reported catch from a pond environment in Delaware. Management options such as piscicides were considered, with the decision being made to go with electrofishing removals, because it has no negative impacts on native species. Thus far, 91 individuals have been removed ranging in size from 120 mm

to 980 mm. This is the first research into electrofishing removals as a control method for this invasive species in a pond environment.

Michael Steiger is an Environmental Scientist III with the Fisheries Section of the DNREC Division of Fish and Wildlife. He works on projects managing invasive aquatic species including Hydrilla, Blue Catfish, Flathead Catfish, and Northern Snakehead. Before working for DNREC, he worked for a lake and pond management company in northern New Jersey for seven years.

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### **On Tick Invasions in the Northeast U.S.**

*Jacob Walls, DNREC Division of Fish and Wildlife*

While the recent arrival of the Asian longhorned tick in Delaware has helped draw attention to the increasing risk of tick invasions, Delaware has a long history of non-native tick introductions. Climatic factors, combined with increased travel and trade, have facilitated tick introductions in Delaware, with several of those introductions leading to established populations. This talk will highlight the public health importance of invasive ticks and provide an overview of tick surveillance activities and findings in Delaware.

Jacob Walls graduated from the University of Delaware in May of 2023 with a Bachelors in Political Law, minoring in Insect Ecology and Wildlife Management. Since graduation he has worked for Delaware Mosquito Control's Tick Program, interfacing with the public on a daily basis during field monitoring and performing presentations for other state agencies as well as the Entomological Society of America.

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### **Small Grant: Invasive Plant Control in Delaware Wildlands' Taylors Bridge Complex** *Brigham Whitman, Delaware Wildlands*

Delaware Wild Lands' (DWL) Taylors Bridge Complex in southern New Castle County is a highly biodiverse mosaic of marsh, grassland, upland forest, and farmland. A 40-acre former agricultural field in Taylors Bridge supports a diverse assemblage of wildlife but also hosts a variety of non-native invasive plant species. Broadcast spraying this site with herbicide would be costly and harmful to non-target species. Therefore, DWL proposed dividing the site into eight management units, alternately burning half of the sites each year, and using mechanical and chemical methods over the entire site to control invasive species. With support from the DISC Small Grants Program, DWL purchased herbicides that will be used to target individual invasive species via spot-spraying. Over time, this method will reduce invasive species, increase native species, and reduce the resources required for long-term management while supporting high-quality habitats for grass and shrubland birds and native pollinator species.

Brigham Whitman is the New Castle County Conservation Programs Manager at Delaware Wild Lands, the state's oldest and largest land conservation organization. Brigham manages land conservation, protection, management, and restoration activities across DWL's New Castle County properties.