Proceedings with Abstracts

ANREP 2022 MICHIGAN
RECONNECTING | NAVIGATING | SUSTAINING

Reconnecting, Navigating, Sustaining

13th Biennial Conference Association of Natural Resources Extension Professionals

May 31 – June 3, 2022

Radisson Plaza Hotel and Conference Center – Kalamazoo, Michigan

---

ANREP

MICHIGAN STATE UNIVERSITY | Extension

Table of Contents

Conference Sponsors	3
Travel Scholarship Awardees	3
Conference Committees	4
Welcome	5
Pre-Conference Workshops & Tours	6
Concurrent Session 1	10
Concurrent Session 2	18
Concurrent Session 3	25
Concurrent Session 4	32

Conference Sponsors

Superior Sponsor: Michigan State University Extension

Huron Sponsors:

- Michigan Natural Features Inventory, Michigan State University
- Natural Resource Extension Education Foundation
- Forestry Webinar Portal
- Michigan State University College of Agriculture and Natural Resources
- Tallgrass Prairie and Oak Savannah Fire Science Consortium
- Tree Farm System

Michigan Sponsors:

- Michigan Sea Grant
- MSU Department of Fisheries & Wildlife
- Great Lakes Biochar Network
- Plainwell Kayak Company

Partner Sponsors:

- MSU Extension Michigan Master Naturalist
- Michigan Forest Association

Travel Scholarship Awardees

Jace McCauley, Auburn University
Amy Lefringhouse, University of Illinois
Sheila Dunning, University of Florida
Maggie Karschnia, University of Minnesota
Drew Metzler, Auburn University
Amanda Marek, University of Florida
Janet Steele, Clemson University
Carrie Brown, Ohio State University
Tony Johnson, University of Wisconsin
Ronnie Cowan, University of Florida
Michele Bakacs, Rutgers University
Carrie Berger, Oregon State University
John Rizza, Oregon State University
Justin Mansberger, Pennsylvania State University
Shelly Krueger, University of Florida
Kayla Thomas, North Carolina State University
Heather Kolich, University of Georgia
Rachel Cochran, Ohio State University

Conference Committees

ANREP Executive Committee

Beth Clawson, 2022 President, Michigan State University
Alicia Betancourt, Past President, University of Florida
Bill Warren, President-Elect, University of Idaho
Holly Abeels, Secretary, University of Florida
Chad Cook, Treasurer, University of Wisconsin
Amy Scaroni, Southern Region Representative, Clemson University
Erika Lyon, North Central Region Representative, Ohio State University
Danielle Rhea, Northeast Region Representative, Pennsylvania State University
Dan Stark, Western Region Representative, Oregon State University
Dean Solomon, Executive Secretary, Michigan State University Emerita
Eric Norland, Liaison, National Institute of Food and Agriculture

Planning / Implementation Committee

Beth Clawson-State Coordinator, Extension Educator, Michigan State University
Alicia Betancourt, Extension Educator, University of Florida
Bindu Bhakta, Extension Educator, Michigan State University
Hope Braithwaite, Extension Educator, Utah State University
Julie Crick, Extension Educator, Michigan State University
Paige Filice, Extension Educator, Michigan State University
Abigail Garofalo, Extension Educator, University of Illinois
Sarah Havens, Extension Field Specialist, University of Missouri
Emily S. Huff, Assistant Professor, Michigan State University
Gregory C. Ira, UC California Naturalist Statewide Program Director, University of California
Andy Lazur, Statewide Water Quality Specialist, University of Maryland
Erica Lyon, Extension Educator, Ohio State University
Katie Ockert, Extension Educator, Michigan State University
Georgia Peterson, Adjunct Assistant Professor, Michigan State University
Michelle Probst, Extension Educator, University of Wisconsin-Madison
Danielle Rhea, Extension Educator, Pennsylvania State University

Welcome

Michigan and her geological features including the great lakes is unique in the world. Michigan boasts more than 11,000 lakes, over 300 named rivers, 37.4 million acres of forest land, 10, million acres of farmland and home to over 47, 600 farms. Tourism Natural resources and water related activities are counted in the top four reasons that people visit Michigan. It is our pleasure to host the 2022 Conference for the Association of Natural Resources Extension Professionals (ANREP).

Michigan's lower peninsula offers many natural features and attractions that provide professional educational tours, and other related educational opportunities all within a 30-mile radius of the Radisson Conference Center downtown Kalamazoo. These include visiting dunes and beaches along the west coast of the state along Lake Michigan, several nature centers, national conservation sites, a State DNR fish hatchery, museums, and more. One exciting new feature is the Kalamazoo Valley Community College Food Innovation Center and MSU partner, where chefs are trained in all aspects of food preparation from growing and harvesting to preserving and preparing all their own food in a LEEDS certified facility.

Visiting Michigan also can provide a rich multi-cultural experience opportunity. Michigan is home to twelve Native Tribes. The southwest region of the state is home to three Potawatomi bands. Kalamazoo ranks 23 out of the top 50 of the most diverse cities in the state. Multiculturalism offers a source of diverse knowledge and experiences leading to increased innovation, creativity and prosperity within the community. This works together to create a community focused on awareness and growth.

Centrally located almost exactly halfway between Detroit and Chicago, Kalamazoo, Michigan offers many broad opportunities that offer a mix of cultural experiences. It's urban to rural features are numerous and all within 30-mile radius of the conference center where you are greeted with a vibrant walkable downtown. The local bus transportation and central bus station are just a few blocks walk from the conference center. The Amtrak train station is also a few blocks away, and the Kalamazoo/Battle Creek International Airport is 15-minute drive from downtown. The Grand Rapids Airport is 1 hour away.

The opportunity to host the National conference for ANREP provides an opportunity for natural resources educators to gain a fuller more balanced understanding of the additional challenges our nation must contend with as we continue to educate and inform our public about sustainability, natural resources related industry and business, conservation, water quality and climate change.

Welcome to "K'zoo in '22!"

Pre-Conference Workshops: Wednesday, June 1, 2022 9:30 AM – 11 AM

Meadows Room: *A Practical Guide for Producing Engaging Videos for Education and Strategic Communication*

Speaker: James Ford

In this interactive workshop, we will cover the basics of producing professional videos from concept through distribution. We begin by examining real-world examples that resonate with natural resource professionals and then demonstrate fundamental skills that you can put into practice right away. We discuss best practices in creating episodic videos that educate, illuminate, and engage those interested in environmental education, outdoor recreation, forestry, fisheries, wildlife, and more. Most of our time together will be spent learning video production skills that will help you produce compelling videos. Specifically, we will look at the tried and true structure of professional video production: pre-production, production, and post-production. In the pre-production segment we will examine what program or episode ideas work and those that don't. Workshop participants are encouraged to bring ideas to discuss and critique. We will look at the two-column video script format and how the pros structure a TV script for maximum effect. In the production segment of the workshop, we will discuss and demonstrate how to perform on camera, and how to use your voice to record narration. Workshop participants will help set up a video shoot with lights, microphones, and cameras. In the post-production segment, attendees will see how video is edited using Adobe Premiere. We will also look at the role of graphics and animation. We will then explore different methods of distribution including creating your own YouTube channel, embedding videos on your website, or simply sending someone a link to your video. Finally, we conclude the workshop with recommendations on how to find affordable video production equipment and how to take the next steps in creating your own video production team.

After attending this workshop, you will be able to: Determine the best approach to making an engaging video based on best practices. Identify the characteristics that make for a great on air TV personality. Implement professional script-writing techniques for two column video scripts. Set up the lights for a video shoot. Set up a camera for a video shoot. Set up a microphone for a video shoot. Describe the video editing process. Discuss the role of graphics and animation in audience engagement. Compare video distribution methods for different use cases. Identify the equipment necessary to produce great videos. Get started making engaging and compelling videos.

Prairies Room 5-6: *Level up your design skills for posters and presentations*

Speaker: Mike Morrison

Participants will experience the core principles of user experience design and how to apply them to making the system of science more efficient and fun to use. You will see seminal, universally-applicable design research communicated through animations, live demos, games,

and silly graphics. At the end, you will (hopefully) have leveled-up your approach to designing all forms of science communication (especially posters, but this will apply to reports, presentations, and tools too).

Participants will learn that design isn't just subjective aesthetics; there's a science to it. By the end, you'll be able to apply some of that science towards improving all of your science communications.

Pre-Conference Tours:

Kalamazoo River History & Current Issues- Paddling Tour

Tuesday, May 31st – 12:30 PM - 4:30 PM

On this 2 hour river tour we will paddle a beautiful stretch of the Kalamazoo River from Plainwell to Ostego, Michigan. Along the way, Dr. Kenneth Kornhesier will discuss Kalamazoo River history and current issues. The Kalamazoo River has a long history of abuse including several major environmental tragedies but with the help of improved regulation, passionate conservation and stewardship, and years of natural attenuation, the river is now one of the areas most protected and most beautiful natural resources.

Important things to note: cost is $30 per participant and includes transportation to the livery as well as rental of single kayak. Participants will sign a liability waiver provided by the outfitter upon arrival. There is a kayak weight limit of 300 lbs. Total time of this tour will be 3.5 hours, leaving the Radisson at 12:30 p.m. and returning to the Radisson at 4:30 p.m. Personal floatation devices will be provided and are required to worn while kayaking. Participants should be able to swim and be comfortable around water as well as able to walk in the water to get in their kayak. Please wear comfortable clothing and suitable footwear for kayaking in the forecasted weather.

MI Paddle Stewards Kalamazoo River Paddle

Tuesday, May 31st – 7:45 AM – 11 AM

Paddlers are invited to join MSU Extension Sea Grant and partners for a half day trip about our MI Paddle Stewards education program for protecting water trails from aquatic invasive species (AIS). Participants will enjoy a leisurely paddle down the picturesque Kalamazoo River, learn about the dangers of AIS, how to identify them, and how to report sightings through the Midwest Invasive Species Information Network. At the conclusion of the paddle, participants will take part in a hands-on boat cleaning demonstration designed to prevent the spread of AIS.

Important things to note: cost is $30 per participant and includes transportation to the livery as well as rental of single kayak. Participants will sign a liability waiver provided by the outfitter upon arrival. There is a kayak weight limit of 300 lbs. Total time of this tour will be 3.5 hours, leaving the Radisson at 7:45 a.m. and returning to the Radisson at 11 a.m. Personal floatation devices will be provided and are required to worn while kayaking. Participants should be able to swim and be comfortable around water as well as able to walk in the water to get in

their kayak. Please wear comfortable clothing and suitable footwear for kayaking in the forecasted weather.

Fire, Fish, and Food
Tuesday, May 31st – 8 AM – 5 PM

This tour provides a full day opportunity to learn about how Michigan is restoring it's unique oak savannas with prescribed fire, the role of state hatcheries in supporting Great Lakes fisheries, and finally sustainable food and drink production, processing and distribution.

The first tour stop will be at the Allegan State Game Area, dedicated to wildlife conservation and management by the Michigan Department of Natural Resources (DNR) Wildlife Division. At this stop participants will visit a unique Oak Savanna complex that has been managed with prescribed fire over many years. It represents one of the best remnant Oak Savannas in the area, and includes many native plant species. It is one of the remaining homes to Karner Blue butterflies, a federally listed endangered species and is listed as a Michigan threatened species and whose larvae feed only on wild lupine, as well as box turtles, wild turkey, deer and many other animals.

The second stop on this tour will be at the Wolf Lake State Fish Hatchery, established in 1972, and operated by the Michigan DNR. This facility and visitor center will unveil the tale of the Great Lakes fisheries and the vital role played by this hatchery, which currently produces steelhead trout, Chinook salmon, walleye and Great Lakes muskellunge for both inland and Great Lakes waters. Participants will have the chance to see lake sturgeon, northern pike, large mouth bass and a variety of sunfish.

The final afternoon stop will take participants to Kalamazoo Valley Community College's Food Innovation Center (FIC), a living learning laboratory where students and community members come to experience sustainable food production, processing and distribution.

Based out of the FIC, the ValleyHUB program is a farm, food hub and education center. The five-acre site located on the outskirts of downtown Kalamazoo, is a former brownfield that was remediated to demonstrate the potential range of urban agricultural practices and scales. Participants will learn how Michigan State University Extension and the MSU Center for Regional Food Systems have been key partners of ValleyHUB since the development phase, providing support and capacity in planning, educational programming and more, as well as tour the indoor grow-room with hydroponic grow stacks, greenhouse with aquaponics system, solar hoophouses and outdoor growing areas.

This tour closes out with a second KVCC stop to the to the Culinary and Allied Health Building to see how student learn in onsite production kitchens and food service environments. Participants will tour the Culinary lab as well as learn about the Sustainable Brewing Program, the first of its kind in the United States when launched in 2015, and tour the teaching brewery, complete with custom-made equipment that gives students the opportunity to learn industry equipment and the science of brewing.

Important things to note: tour cost includes transportation and lunch. Participants should wear comfortable shoes/boots for walking/hiking on uneven ground. Dress in layers as portions of the tour will be conducted outdoors.

Kalamazoo Green Infrastructure Walking Tour
Wednesday, June 1st – 8:30 AM – 12 PM

This walking tour of downtown Kalamazoo will explore different applications of green infrastructure around the conference venue. The session will be led by Jamie McCarthy, Sustainable Development Coordinator at the City of Kalamazoo. It will include additional speakers at various stops along the way. The tour will begin along Arcadia Creek with a stop at the Kalamazoo Valley Museum. At the museum we will see the outdoor rain garden exhibit and see how permeable pavers help reduce stormwater runoff. Next we will visit Kalamazoo City Hall to see a green roof installation. From this vantage point, you will see and hear about other green building projects in the City. Last, the tour will visit the Kalamazoo Valley Culinary and Allied Health Building. The campus was designed to the avoid flooding from Portage Creek and improve the stream corridor. The tour will return to the conference venue by way of the historic Kalamazoo Mall where we will hear about the City's efforts to improve the downtown streetscape with new design and green infrastructure elements.

Things to note: Participants should dress for the weather. Most of the tour will be conducted outdoors on city sidewalks and streets. Participants are encouraged to bring comfortable walking shoes, a hat, sunglasses, and water. The total walking distance for the tour is just over 1.5 miles with several stops in between where participants with stand to hear brief presentations.

Concurrent Session 1: Wednesday, June 1, 2022 1:30 PM – 3 PM

Prairies Room 5-6: Program Delivery & Design—Water/Water Resources

1:30 – 1:50 – *Backyard Stream Repair: Engaging DIY Homeowners*

Speakers: Susan Boser, Danielle Rhea, Jennifer Fetter, Andy Yencha

Join us for an overview of Penn State Extension's new Backyard Stream Repair program for owners and managers of small streams. We will share the successes of working with this new and eager audience of DIY empowered citizens. We will explore the available resources on small scale streambank restoration including the physical tools and techniques we incorporated into our guidance manual and companion 5-part webinar series, and how we helped instigate riparian buffer plantings, live staking, and streambank stabilization across Pennsylvania without leaving our computers.

This webinar series helped to empower landowners to take action and gave them resources to be successful with a backyard stream repair project that would not only improve their individual landscape, but also contribute to improving the local watershed as a whole. We will share evaluation data from individual learning sessions administered in the Backyard Stream Repair program as well as overall course evaluation data and implementation of conservation practices in the 6-8 months following course completion.

This presentation will provide an overview of the guidance manual and webinar series we created, and how these resources could be adapted to other states, conservation practices and audiences, including green industry professionals. This session would be helpful for anyone looking for ways to increase their reach and implementation of best management practices, particularly with smaller scale landowners who are not willing or ineligible to participate in publicly funded programs.

2 – 2:20 - *Creative thinking for continued compliance-based trainings*

Speakers: Haley Parent, Jeremy Pike, Calvin Sawyer, PhD

While COVID-19 has affected the scope of how we interact with our various constituencies, the demand for certain programs remains unabated. For over 16 years, Clemson Extension, in partnership with the South Carolina Department of Health & Environmental Control (SCDHEC) and South Carolina Department of Transportation (SCDOT), has provided two compliance-based training and certification programs to address stormwater plan review and inspection of permitted SC construction sites.

The Certified Erosion Prevention and Sediment Control Inspector (CEPSCI) and Certified Stormwater Plan Reviewer (CSPR) programs educate and certify individuals in the areas of erosion prevention and sediment control. From proper design and review of stormwater plans to installation, maintenance, and inspection of construction site BMPs, both courses focus on meeting regulatory and compliance requirements. The COVID-19 pandemic resulted in the cancellation of all in-person CEPSCI and CSPR training courses that hundreds of personnel rely on each year for certification and recertification.

Comprised of Extension specialists, associates, and agents partnering with state colleagues, the team set out to provide alternative solutions to in-person instruction. From May 2020 to December 2021, the team created, organized, and offered five distinct and separate courses (some multiple times) utilizing three online platforms and facilitating virtual instruction to 1,982 participants. Courses occurred synchronously and asynchronously online, using remote proctoring software for certification exams.

In addition to reduced-capacity in-person offerings, the CEPSCI & CSPR teams will continue to offer online and remote course options as SC residents and the world experience extraordinary circumstances due to the COVID-19 pandemic.

2:30 – 2:50 – *Healthy Pond Series: Facilitating connection and collaboration opportunities in stormwater pond management outreach for both participants and educators*
Speakers: Brooke Saari, C. Guinn Wallover

Stormwater ponds are the most frequently used practice to help manage flooding and pollution in South Carolina, with over 9,000 ponds in the coastal zone alone! Extension and education partners in South Carolina have offered a variety of outreach tools to help meet pond education needs. Feedback has shown that stormwater pond owners, the program target audience, desired more peer-to-peer networking opportunities. To facilitate this process, Clemson Extension, SC Department of Natural Resources, SC Sea Grant Consortium, and USC-North Inlet Winyah Bay NERR developed the Healthy Pond Series. The Healthy Pond Series, now hosted in the greater Charleston, Beaufort, and Myrtle Beach communities, is designed to be an educational networking opportunity to connect stormwater pond owners with others in their area. As part of the series, participants discuss best practices in pond maintenance and feedback on successes, or failures, in their management efforts. Each segment in the quarterly series, includes a lecture portion on a maintenance topic and interactive hands-on discussion time for owners. In the Charleston workshop alone, since its start in 2017, has reached more than 400 attendees, with many of these being repeat participants and attending multiples dates during the year. Program evaluations show the delivery format is highly successful in meeting pond owner's needs. This program format provides Extension agencies a unique model for delivery of stormwater education that fosters peer-to-peer connection, as well as serving as an opportunity for cross-sector agency collaboration, leveraging resources to meet a shared goal of water resource protection.

Glens Room 1: Use of Technology—Zoom Use/Hybrid Learning
1:30 – 1:50 – *Multiple virtual platforms extend the reach of Water Wednesday*
Speakers: Yilin Zhuang, Krista Stump

Water Wednesday is a collaborative multi-county extension program that addresses water quality protection and water conservation practices. This educational series offers weekly 45-minute live webinars hosted on Zoom and broadcasted to Facebook Live. The webinar recordings are shared on other social media platforms including YouTube, University of Florida blogs, and the Water Wednesday webpage for later viewing. Topics in this water series ranged

from Florida-Friendly Landscaping principles to stormwater management and springs protection. This program is cross promoted by co-hosting the events on Facebook pages from multiple counties in the UF/IFAS Extension Central District. From May 2019 to November 2021, we conducted 46 webinars with 965 group participants from Zoom and Facebook Live. The webinar recordings reached 9,440 views on Facebook and 3,100 views on YouTube. The post program surveys (n=192) indicated that 80% attended Water Wednesday on Zoom, 15% joined by Facebook livestream, and 3% watched the recordings on YouTube. The use of social media has distributed educational videos to a broader audience. However, the novelty of teaching through social media has come with challenges in evaluating practice adoption. With more empirical research on effective use of virtual teaching platforms, we will be able to track the impacts of Water Wednesday.

2 – 2:20 – *Geographically separated, virtually connected: co-teaching across the state utilizing Zoom*

Speakers: Ana Zangroniz & Laura Tiu, Dr. Laura Tiu, Sheila Dunning

The Covid-19 pandemic brought many changes to Extension programming delivery, largely, the transition into virtual platforms. Utilization of these technologies allowed for safe participation. The Florida Sea Grant agents in Okaloosa and Miami-Dade counties and Okaloosa County Commercial Horticulture agent collaborated and offered an entirely virtual module of the Florida Master Naturalist Program (FMNP), which historically had only been offered in person. Objectives: Offer an FMNP module delivered entirely via Zoom and make the experience as engaging as possible without the inperson component. Methods: Three UF/IFAS Extension Agents planned and delivered the course. In addition to the required lectures and videos, they coordinated guest speakers, planned other in-class activities and developed guidelines for self-guided field trips and report-out sessions. Results: 20 students participated in the June/July 2021 Freshwater Systems course. Pre and post test scores indicated a knowledge gain of 18%. 18/20 students completed the post-course evaluations, with 10 rating the course as “Excellent”, 5 “Very Good”, and 3 “Good”. Open-ended responses reflected the overall high level of satisfaction with the course. Follow-up surveys documented further impacts including volunteer time, information shared with others, working for an organization that promotes advocacy based on science, and more. Conclusions: Virtual platforms allow expanded collaborations between agents, across disciplines and physical location. Carefully planned activities successfully build relationships across a virtual space and enhance the learning experience. Zoom provided a unique opportunity for three agents, geographically distanced by 630 miles to teach together.

2:30 – 2:50 – *The Conservation Stewards Program's virtual journey: opportunities and lessons learned for a hybrid future*

Speakers: Georgia Peterson, Bindu Bhakta, Alexa Warwick

The Michigan Conservation Stewards Program (CSP) helps individuals gain knowledge and expertise that empower them to engage in stewardship activities in their local

communities. Traditionally, CSP was 100% in-person instruction, combining weekly classroom presentations and hands-on field experiences. Partner organizations help provide these enriching experiences, and in turn, receive highly knowledgeable graduates as potential volunteers for their own work.

During the pandemic, CSP transitioned to a virtual format, presenting significant challenges to maintain engaging, experiential learning. Content was delivered to participants via the university online platform and weekly Zoom sessions, and a list of field activities was provided to complete on their own. We encouraged safe interactions among participants and partners through online discussion forums, Zoom breakout sessions, and applied capstone projects.

137 individuals registered across four regional learning cohorts, with 58% earning a completion certificate. Both online material and Zoom presentations scored relatively high in the post-program survey. Responses indicated the program met their expectations, helping them to learn new concepts and connect to conservation partners.

Unsurprisingly, lower ratings from both participants and partners were associated with limited availability of in-person local activities and stewardship. Others mentioned, however, there is value in retaining some online portions for future offerings. For the planning team, coordinating and executing the shift from in-person to virtual programming was an extremely time-intensive process. In the proposed session, we will discuss the 2021 CSP transition and how input from participants, partners, and Extension staff will inform delivery of future CSP offerings.

Glens Room 2: Innovative Approaches—Forestry

1:30 – 1:50 – *Leveraging field-based research and demonstration to promote forest farming adoption in the pacific northwest*

Speaker: Patrick Shults

Forest farming systems are common in parts of the eastern U.S. but have yet to become popular in the Pacific Northwest. This is likely due to a greater emphasis placed on timber production and significant opportunity for wild-foraged non-timber forest products in the region. Nonetheless, there is fertile ground for forest farming systems such as log-grown specialty mushrooms and maple syrup production in the lush coastal forests. Forest and farm owners are beginning to explore these practices, either as a hobby or to generate supplemental income. In the last three years, WSU Extension has led or engaged in field-based research examining both systems and, in doing so, created multiple opportunities for hands-on workshops and demonstration. This talk will examine how WSU Extension develops and maintains these opportunities, including funding mechanisms, and the benefits of immersing both Extension agents and landowners in the process of “learning by doing”.

2 – 2:20 – *Restoring ecosystem health with targeted disturbance: Oak savanna, Silvopasture and Adaptive grazing*

Speaker: Gary Wyatt

Silvopasture, which combines the practice of adaptive grazing, forestry management and forage stewardship, can help achieve vegetation management goals and enhance wildlife habitat via targeted disturbance. This presentation features information on adaptive grazing management applied to oak savanna restoration and provides an update on a three-year research and education project involving University of Minnesota Extension, Great River Greening and Sustainable Farming Association of MN. This project is funded by a grant from the Legislative Citizen Commission on Minnesota Resources (LCCMR).

2:30 – 2:50 – *A Network Analysis to Identify the Procurement Zones Around Milling Facilities in Michigan*
Speaker: Naresh Khanal

The forest has a significant contribution in providing critical ecosystem services, clean drinking water, fresh oxygen, carbon sequestration, preventing soil erosions and direct economic benefits to people. Various researches have shown that the health and productivity of the forest is enhanced by a timely harvest of the forest products. For accomplishing the goal of sustainable management and optimum utilization of natural resources, forest managers, land owners and policy makers need to understand the market coverage and competitiveness of harvested wood products. By utilizing the available road network and data on milling facilities of Michigan, I ran network analysis in ArcGIS to generate the procurement zoning of mills. These zones represent the economically feasible regions around the mills to collect wood products. The findings deliver the best available options for economically feasible supply regions and market extent for biomass merchantability in Michigan. Additionally, I compared how the procurement zoning of mills has been changed in last four decades (1980s, 1990s, 2000s and 2010s). The findings can be helpful for the policy-makers, business owners, and consumers in making evidence-based choices/decisions in managing Michigan's forests optimally.

Glens Room 3: Partnerships & Collaborations—CDE/DEI
1:30 – 1:50 – *Preserving Cultures and Open Spaces: CIVIC Addresses Land Use Planning in Historically Black Communities*
Speakers: Joy Hazell, Dreamal Worthen, Ph.D., Kimberly Davis, Martha Monroe, Mandy Baily

Local citizens feel increasingly removed from land-use decisions in their communities. In addition, members of some groups are historically underserved by local government and may not feel invited to engage with local government. Community Voices, Informed Choices (CIVIC), a partnership between University of Florida and Florida Agricultural and Mechanical University, recognizes the importance of having a diversity of perspectives in land-use decisions and aims to build community capacity to work toward inclusive decision making.

The program adapted the Kettering Foundation's National Issues Forum process for deliberative discussions to engage local citizens around land-use issues in their communities. In 2021 and 2022 CIVIC created, piloted and evaluated a land use deliberative discussion guide in three historically black communities of Florida. The land-use guide reflects economic,

environmental, and individual needs around land use in local communities. In our pilot of historically black communities, we learned that partnerships with community organizations and leaders are key to successful forums, cultural and historical realities are unique and of vital importance to the discussions of land use and land use changes in these communities, organizations and agencies working in these communities must remain aware of how their work or research may burden community members with redundant questioning or extractive research that is not shared back. Forum participants left the events feeling empowered to make changes and results from the forums include the formation of new partnerships and connections to new grants and projects.

2 – 2:20 – *What's In a Name? Thoughtful Nomenclature Makes a Difference Species*
Speakers: Angela Gupta, Megan Weber

The University of Minnesota (UMN) Extension's Invasive Species Community of Practice (IS CoP) believes in the adoption and use of appropriate, acceptable names for invasive species reflective of our values for diversity and engagement. The IS CoP developed Guiding principles to inform selecting primary common names for new non-native species. Additional processes were developed to apply these new principles to Extension programs.

What's in a name? A lot. In 2014, Minnesota legislators passed a bill that included a name change for state agencies from "Asian carp" to "invasive carp", in response to concerns raised by the AsianAmerican community. Yet, many other, potentially invasive species with similar place-based names exist and are emerging in Minnesota without discussion like crazy worms, Manchu tubergourd, Siberian squill, etc.

To help inform a process for thoughtful development of appropriate common names, IS CoP reached out to two invasive species research centers and Extension's Foreign Born Affinity Group at UMN for feedback and review. Their feedback drastically changed our approach and increased our sensitivity to this issue.

This presentation will review key discussion points and the decisions, revisions and procedural practices that resulted. Our first test of this process resulted in naming and approving use of the common name red hailstone for Thladiantha dubia. Outcomes are that red hailstone is now used by EDDMapS, iNaturalist, MN Wildflowers and eventually USDA Plants Database. To date, the UMN IS CoP has helped change troublesome common names of 18 invasive species on state and national platforms.

2:30 – 2:50 – *Diving into diversity - broadening youth outreach through 4-H environmental education extension programming*
Speakers: Sarah Davis, Abbey Tyrna, Katherine Clements, Randy Penn

Through team collaboration extension colleagues designed and delivered innovative programs reaching new audiences. Programs included summer camp, partnership programs, STEM special interest club and school enrichment opportunities. This presentation will highlight the programs and audiences we worked with striving to make longer term impact in our community and reaching out to underserved audiences. Exploring your Environment, a five day

long experiential adventure for middle school youth that includes outdoor field investigations, service-learning and explorations of local natural areas and parks engaged seven additional youth through scholarships. Outdoor Investigator started as an online program during the pandemic and in 2021 was tweaked to go back outdoors for scientific inquiry with partners serving underserved communities and schools. Each experience was theme-based and focused on ecosystem interactions in the backyard or in neighborhood waters. We continued a similar program partnering with Easter Seals academy working with high school youth with intellectual disabilities. The STEM special interest club is a partnership with the local housing authority youth and black middle school youth living in housing engaged in monthly lessons engaging them in the environment and scientific investigations. LIFE program (Learning in Florida's Environments) successfully educates students on the importance of local ecosystems, conservation, management challenges, and sciencebased careers working with title I schools. During the pandemic engaging videos were created while in-person visits were put on pause. Take a brief look into these programs and approaches to learn how you could broaden your reach to underserved youth.

Prairies Room 4: Community Assessment & Action—Climate Change

1:30 – 1:50 – *Planning & zoning for solar energy systems in Michigan*
Speaker: Tyler Augst

Communities across the country play an important role in where and how solar energy systems get developed. This presentation will introduce the Extension resource, Planning & Zoning for Solar Energy Systems: A Guide for Michigan Local Governments. This document illustrates how various scales and configurations of photovoltaic SES fit into landscape patterns ranging between rural, suburban, and urban. It was developed by experts within MSU Extension and the MSU School of Planning, Design and Construction in partnership with faculty at the University of Michigan Graham Sustainability Institute. It first presents the current context for solar in Michigan, describes the various components and configurations of SES, and provides principles for how SES might fit within various land-use patterns across the state. The guide presents sample language for including SES into a community's zoning ordinance.

2 – 2:20 – *Designing a co-creation process for climate change related curriculum*
Speaker: Melissa Kreye

Climate change is expected to impact people differently based on their location and socio-economic status. People will also differ in their ability to adapt to changes in the environment and the associated social and economic conditions brought about by climate change. For some people, climate change mitigation activities may even bring about more opportunities (e.g., collaborations, jobs). Adult education theory poses that motivation to engage in informal education is largely driven by the need to solve real life problems. However, much of the information delivered about climate change to the public is still disconnected from the concerns and needs of everyday people. Creating pathways that allow stakeholders to engage in the curriculum development process can help ensure that the curriculum addresses

the values, needs and conditions of the community that is being served. This talk will present several examples of how the co-creation process was used to develop climate change related curriculum for diverse categories of stakeholders including non-industrial forest owners, women, Latinx communities and Native American communities.

2:30 – 2:50 – *Climate Smart Floridians program - community action on climate change*
Speaker: Holly Abeels

University of Florida Sea Grant and Extension agents, specialists and researchers developed the Climate Smart Floridians program to complement existing educational programs such as the Sustainable Living and Leadership Series and CIVIC programs. This program is specifically aimed at educating participants on individual actions to reduce climate change impacts and covers how climate change will impact Florida. Climate Smart Floridians is a model for providing citizens research-based information about climate change and engaging them as ambassadors to help reduce household expenses and greenhouse gas emissions. It addresses how climate change relates to topics such as landscaping, water resources, transportation, home energy, food, and waste. This program has resulted in critical decision-making skills about the impacts of individual choices on climate change. Individuals are encouraged to increase use of alternative transportation, changes in daily habits around consumption and waste, and implement home energy efficiency improvements. The subject of global climate change can be overwhelming to the individual and this program is intended to answer the question “What can I do?”. This presentation will describe how the program has been offered in Florida communities, results and evaluations from these programs, and how you can adapt the program for your state and community.

Concurrent Session 2: Wednesday, June 1, 2022 3:30 PM – 5 PM

Prairies Room 5-6: Program Delivery & Design— Horticulture/Environment/Ecosystems

3:30 – 3:50 – *Edible Florida-Friendly Landscaping™: conserving water & improving food security*

Speaker: Amanda Marek

In 2020, agents from the UF/IFAS Marion County Extension Service began a new Edible Ornamental Landscaping program with emphasis on the nine Florida-Friendly Landscaping™ principles to meet the growing demand from residents to have low-maintenance landscapes that also produce food. The objectives of the program are to educate homeowners and landowners in Marion and surrounding counties on:

1. The principles of Florida-Friendly Landscaping™ to have a low-maintenance, attractive, and productive edible ornamental landscape that conserves water
2. How to plan, design, plant and maintain an edible ornamental landscape that provides fresh produce for their household or others to consume.

Five online classes with 926 participants have been conducted. To supplement these classes, an 11,000 square foot edible ornamental demonstration landscape was installed and completed in Ocala, FL in 2021. 27 people participated in three in-person programs at the demonstration garden that are sequential to the online classes. The majority of participants reported knowledge gain of the FFL principles and edible landscaping, have made changes to their landscape, and have improved their landscape management. Since attending a program, participants have added Florida-friendly edible plants to their landscapes and have eaten or intend to eat the fresh food they harvest. Program participants have also decreased the amount of water used for irrigation, resulting in an approximate savings of 855,000 gallons of water per year.

The Marion County Edible Ornamental Landscaping program has expanded the reach of the Florida-Friendly Landscaping™ principles to new audiences, reducing water use and improving food security for Floridians.

4 – 4:20 – *How to start a native plant propagation and education program with volunteers during a world-wide pandemic*

Speakers: Michele Bakacs, Angela Monaghan, William T. Hlubik

In 2019, Rutgers Cooperative Extension of Middlesex County volunteers and staff started a native plant propagation nursery and education program. The purpose is to (1) increase the biodiversity of built landscapes in Central New Jersey, (2) donate plants to community projects and improve their maintenance, (3) install native garden demonstrations for suburban/urban yards.

In 2020, per university mandate, no in-person volunteer activities were allowed due to Covid-19. We had to quickly adapt to sustain this volunteer project. Extension staff focused on installing nursery beds, fencing, and irrigation and established a protocol for at home volunteer activities. Over 30 volunteers were trained virtually on native plant ecology, seed sowing,

transplanting, and maintenance. Fact sheets and supplies were provided. Native plants can easily be cared for outside making at home care easy for volunteers.

Despite the quarantine, the project has been a success. In 2021, 9,500 native plants (46 species) were grown from seed collected by volunteers. A protocol was established for conducting socially distant online sales allowing consumers to pick up pre-packaged garden packs at a drive-by pickup dayhttps://go.rutgers.edu/nativefallsale. 2,400 plants were sold. Three public webinars (480 participants) were conducted on propagating native seeds, starting native gardens, and sustainable land care for watershed protection. 400 plants were donated to four community projects including a rain garden, pollinator garden, and a meadow restoration.

This project demonstrates the ability of Extension to quickly adapt to changing circumstances while filling an important niche in providing public education and local access to native plants.

4:30 – 4:50 – *Wild harvesting plants for food, medicine, and craft*
Speaker: Holly Campbel

Do you have an interest in teaching your community about useful wild plants, but lack knowledge and confidence in wild harvesting? If so, then this presentation is for you. During the presentation, participants will learn best practices for identifying, harvesting, utilizing, and storing a variety of wild plants found in the eastern U.S for food, medicine, and craft. Participants will also be introduced to several popular wild harvested plants, including oak, persimmon, American elder, and black walnut. The presenter will share lessons learned from their successful 2021 six-part webinar series on wild harvesting, a new undergraduate course on the subject, and several wild harvesting hands-on workshops planned for 2022. The goal of wild harvesting educational programs is to build knowledge of and appreciation for the use and conservation of non-timber forest species, as well as increasing ecosystem health by encouraging and even increasing native plant diversity in natural environments.

Glens Room 1: Use of Technology — Apps/Software/Video Production
3:30 – 3:50 – *Citizen Science Opportunities using Personal Weather Stations*
Speaker: Steve Marquie

Having access to current weather information has never been easier. There are over 2,000 weather information “apps” available for my Android phone! But, the data the “app” uses is only applicable if there is a weather station or observer at the location you need data for! Volunteer monitoring efforts provide essential data for NWS and NOAA, and also other outlets such as The Weather Channel, Weather Bug and Weather Underground. But, the value is much broader as this data is used to monitor the potential for pests and diseases in crops, water quality and water use, and the effects of the changing climate. For this presentation, I will cover the various ways your audience can participate in weather data collection. From simple manual precipitation gauges to more sophisticated instrumented weather stations, they can join the network of 1000â€™s of other enthusiastic citizen science participants and contribute to data collection. Participants may become a member of the volunteer monitoring

efforts of CoCoRaHS, the Community Collaborative Rain, Hail and Snow Network, founded by the Colorado Climate Center at Colorado State University. Iâ€™ll also describe the Citizens Weather Observation Program (CWOP), and the technology needed to contribute to this project. Finally, Iâ€™ll wrap up with a summary of the different equipment available for those who want to have their own personal weather station to learn about meteorological science.

4 – 4:20 – *Economic impacts of using working lands and prairie preserves for habitat protection, Thurston County, Washington*
Speaker: Stephen Bramwell

Prairie ecosystems of south Puget Sound are a home for rare species and a productive grazing resource for livestock farms. However, balancing the needs of agriculture and rare species conservation is a challenge. In 2014, Thurston County began developing a Habitat Conservation Plan (HCP) in response to Federal Endangered Species Act listing of six threatened or endangered prairie species. The intention of this study was to quantify the potential economic impacts of using different land management types to achieve species protection. The total economic impacts of five different combinations of ungrazed “new reserves” and grazed “working lands” acres were analyzed. Data for the impact assessment were derived from enterprise budgets developed for this project. An input-output analysis was completed using IMPLAN software to model the total new dollars introduced to the County and total economic impact of the five land management combinations. Total economic impacts increased when more working lands were recruited into the program ($0 with no working lands to $2.09 million with 400 ac working lands, and $7.83 million with 1,500 ac of working lands). Generally, total economic impacts uniformly increased, and costs decreased, in scenarios where greater proportions of working lands were engaged. These results are used by Thurston County to optimize the use of working lands and new reserves in rare species protection. Optimization depends on balancing the economic impacts of using working lands and new reserve acres with the habitat value of these management types.

4:30 – 4:50 – *Video production is for natural resources extension professionals*
CANCELLED—Recording to be posted post conference
Speaker: Sanford "Sandy" Smith

The popularity of concise, on-demand educational videos continues to grow exponentially every year. Internet videos are effective teaching tools that are timesaving, compelling, and assessable almost anywhere. Unfortunately, while many state universities have digital education units responsible for producing professional Extension videos, they are unable to meet the high demand from Educators and Specialists for video production assistance. But with some basic training, low-cost equipment, and dedication, anyone can produce their own high quality educational videos that are Internet ready, unique, and meet basic standards. And natural resources videos have the added benefits of scenic outdoor settings and endless natural topics of wide interest. Regardless of your status as a digital native or migrant, you will be

encouraged by this brief presentation to get started using this creative and fun technology that has never been more available and easier to use.

Glens Room 2: Wildfire

3:30 – 3:50 – *Preparing for wildfires with firescaping: A training for southeastern U.S. master gardeners*

Speaker: Holly Campbell

Every year thousands of wildfires occur across the country, including in the southeastern U.S. The destructive 2016 Appalachian fires (and other recent fires) revealed that many southern communities and homeowners are unprepared for wildfires. To help decrease southeastern homeowner risk to wildfires, an Extension team developed a USDA-NIFA Smith-Lever Special Needs funded project to develop a fire-resistant (firescaping) landscape training for Southeastern Master Gardeners. Firescaping is a type of landscape design and maintenance that can decrease the likeliness of home ignition from wildfire. The project goal is for Master Gardeners to become a conduit of firescaping knowledge for their community, supporting individual homeowner and neighborhood adoption of firescaping. The project, Preparing for Wildfires with Firescaping, includes a 6-week online, asynchronous training, as well as materials to support a day-long, in-person training for Master Gardeners. An online training is also available for Extension Agents to increase their knowledge of firescaping prior to offering the training in their area. Currently offered in Florida, North Carolina, and Tennessee, the training will also be available in 2022 in Georgia and Mississippi. Completed in 2020 and 2021 (with delayed implementation due to COVID-19), the training has been completed by over 80 Master Gardeners and 20 Master Naturalists. Training participant outcomes reported include establishing firescaping demonstration gardens, providing firescaping presentations to HOAs, writing articles about firescaping in local media, and firescaping their own yards. This training is also applicable to Master Naturalists, Firewise USA Sites, and other community groups and volunteers.

4 – 4:20 – *Identifying barriers to forest management for small private forest landowners in California*

Speaker: Susie Kocher

Approximately 9 million acres of forestland in California are family-owned parcels 500 acres or less in size with 87,000 landowners owning >/10 acres. As a group, these landowners face many barriers when trying to manage their forests. The California Forest Practices Act requires expensive analysis and environmental review of any commercial project. Practices for fuels reduction (usually non-commercial) can be expensive and contractors who can complete forest management projects are in high demand or limited in numbers in parts of the state. Additionally, private landowners may not have the capacity to harvest trees because their property is too small or there is a lack of local forestry infrastructure. Because of recent intense wildfire seasons, the state of California is increasing funding to assist private forest landowners with managing their forestlands for health and fire resiliency. However, the most effective ways

to spend these state funds to best help private forest landowners are not well understood. The Forest Stewardship Education Initiative, hosted by the University of California Cooperative Extension, funded by Cal Fire, and with cooperation of local RCDs, is a workshop series providing education and skills needed by landowners to start developing a California Cooperative Forest Management Plan and prepare them to work with a Registered Professional Forester who can help implement forest management activities. We conducted a participant interview project to identify the most common barriers faced by these motivated landowners when trying to manage their forestlands and the strategies they are using, or not, to overcome them.

Glens Room 3: Partnerships & Collaborations— CDE/DEI

3:30 – 3:50 – *Reconciliation ecology in expanding residential landscapes: a case study from nontraditional urban extension*

Speaker: Basil Iannone

Residential and low-density housing areas, one of the fastest growing land use types, now covers approximately 25% of the US. Environmental impacts of residential development include habitat and biodiversity loss, and those impacts associated with the irrigation, fertilizers, and pesticides used for landscaping. Given these impacts, there is a need to design, construct, and manage residential landscapes to support native biodiversity and ecological functioning, i.e., to practice "reconciliation ecology". Pursuing this goal requires collaboration among nontraditional Extension stakeholders involved in land development. My talk will discuss one such collaboration among UF/IFAS, land developers, landscape architects, plant producers, green industry professionals, the University of Central Florida, and the Nature Conservancy. In looking for strategies to conserve water and protect nearby lakes from fertilizer runoff, we have installed a large field experiment at the entryway of a planned 29,000-home development. The experiment aims to identify irrigation and soil remediation strategies to establish drought tolerant native plants. It also doubles as an attractive landscaped feature, providing opportunity for outreach/education about the environmental benefits of native landscaping. Many important impacts have emerged from this collaboration, including buy-in on the importance of science for meeting sustainability goals, as evidenced by the land developer funding a graduate student. The collaboration also resulted in the design of native, drought-tolerant landscaping for 12 model homes. Once installed, theses model homes will demonstrate the attractiveness, feasibility, and environmental benefits of drought-tolerant native landscaping, inform landscaping designs in this and future development projects, and provide long-term outreach and research opportunities.

4 – 4:20 – *Sargassum management master plans: University of Florida IFAS Extension agents create partnerships to turn mountains of trash into cash*

Speakers: Shelly Krueger, Ashley Smyth, Michelle Leonard-Mularz, Armando Ubeda

Since 2011, huge influxes of sargassum, a brown macroalgae, have been inundating Florida beaches. Sargassum provides numerous ecological benefits; however, these

unprecedented accumulations are negatively affecting nearshore environments and tourism. Many coastal counties are developing sargassum management plans as these summer influxes are likely the “new normal”. The cost of sargassum removal is high and landfill fees can exceed $500 per truckload. In Monroe County alone, the Tourist Development Council estimates the economic impact from a severe sargassum year could be $20 million and 300 lost jobs. As a result, there is a need to find economical methods for sargassum removal and reuse. A bi-coastal team of 6 University of Florida IFAS Extension faculty developed a pilot study in cooperation with 3 city governments, 4 county governments, parks and recreation departments, a nuclear power plant, and a botanical garden to evaluate the viability of composting sargassum for use as a landscape soil amendment. More than 30 master gardeners, students, and citizens volunteered >135 hours to assist with the 5-month replicated study in Sarasota, Monroe, Martin, and St. Lucie counties, Florida. Our results were compared to commercially available compost using metrics of soil health and fertility at 3 locations in coastal Florida to compare site-specific differences. The partnerships created, and knowledge gained, have contributed to sargassum management master plans within those counties. The ability to utilize sargassum for landscaping valorizes a product that is currently sent to landfills, and could save local governments hundreds of thousands of dollars per year.

4:30 – 4:50 – *Designing discussions to encourage community action*
Speakers: Holly Abeels, Martha Monroe

CIVIC (Community Voices, Informed Choices), a program of the Florida Cooperative Extension Service led by both Florida Agricultural and Mechanical University (FAMU) and University of Florida (UF) develops and conducts deliberative discussions in local communities throughout Florida. Our relationship with municipal governments enables Extension agents to be a bridge between the public and the staff, collecting and synthesizing public opinion, and even targeting critical voices that may not often be heard. This enables us to report that actions were taken to help solve the problem if community government was already primed to work on the problem. Due to COVID-19, most in-person gatherings were cancelled in 2020 and 2021; our deliberative discussions and focus groups were conducted via Zoom, which caused people to be less likely to participate or for the groups to be smaller in size and more homogeneous. CIVIC was still able to help move participants toward community action by developing and following specific guidelines to engage communities in the discussion. These guidelines include understanding that moving toward community action (1) begins before the deliberative discussion, (2) requires specific strategies during the deliberative discussion, and (3) is a function of the partners, issues, and the opportunities. This presentation will describe in more detail these guidelines and what CIVIC has learned from the discussions over the past 2 years. The presentation will also explore next steps for CIVIC, challenges we still see, and skills we’d like to continue to build.

Prairies Room 4: Special Session/Workshop

3:30 – 5 – *How a "French cart" was used to co-create an outreach plan with stakeholders, not for them!*

Speaker: Katie Ockert

Chronic wasting disease (CWD) in Michigan's deer population is having statewide public impacts, well beyond traditional hunting groups. As more is learned about the disease, broader stakeholders may be affected by regulations, legislative policy, impacts on retail, and environmental contamination. Impacted stakeholders and the public need information about the disease and related policies that may affect them. To address this need, the National Charrette Institute, Michigan State University Extension, and Michigan Department of Natural Resources convened a broad set of viewpoints including, agriculture producers, deer co-operatives, hunters, local businesses, local government, privately-owned Cervidae (deer, elk, reindeer, and moose) producers, processors, public health organizations, sports shops, tribal government, and youth to co-create a CWD education and outreach plan using a unique community engagement process called a charrette.

The goal of this project is to help individuals from across Michigan better understand the scope of CWD effects and communicate the strategies that can be undertaken to minimize the impact of the disease and reduce its spread. While the community-engagement activities will take place in the Montcalm/Ionia County are, "the hotspot for CWD prevalence in Michigan," it is anticipated that components of the plan will be relevant for audiences statewide.

Hear the story about this process: how we used a viewpoint-diverse steering committee to develop the engagement process, persevered through Covid, delivered the charrette, and what the outcomes were. Extension professionals will learn how they can utilize and adapt the charrette process in their own communities as a community engagement and needs assessment strategy.

Concurrent Session 3: Thursday, June 2, 2022 10:45 AM – 12:05 AM

Prairies Room 5-6: Audience Needs & Assessment — Forestry/Wildlife

10:45 – 11:05 – *Understanding Maryland landowner's relationship with wildlife: habitat, damage, economics, and easements*

Speaker: Luke Macaulay

Wildlife is consistently ranked as one of the highest motivations for owning undeveloped land in the U.S. (Bengston 2011; Ferranto 2011; Metcalf 2010), but we have relatively limited knowledge on the specific actions that landowners take or need information about to better steward their properties. Our research seeks to deepen our understanding of landowner conservation practices, including gathering information about specific management practices, barriers to adoption, wildlife damage, economic factors, and conservation easements. This information will serve as a needs assessment to develop a targeted extension and educational program in wildlife management. We are currently conducting a survey of several thousand randomly sampled landowners in Maryland. Given the highly skewed nature of property size ownership (few large landowners, and many small landowners), we are stratifying our sample to ensure robust participation among various size classes of property owners. We will tie the responses to satellite-based land cover maps (USDA Cropland Data Layer) that will provide an independent quantification of land cover on each property to deepen our understanding of how land cover (i.e. forests, agriculture, and grassland) influences conservation and interactions with wildlife. These results will be used to develop a targeted and prioritized wildlife management extension program for landowners in Maryland that addresses a known need in the community.

This research was made possible by the McIntire Stennis Capacity Grant, which seeks to increase forestry research in the production, utilization, and protection of forestland; to train future forestry scientists; and involve other disciplines in forestry research.

11:15 -11:35 – *How are Alabama Municipalities Approaching Urban Tree Risk and Addressing Liability Concerns?*

Speaker: Arnold "Beau" Brodbeck

Managing for tree risk and public safety is an important component of municipal tree care programs. Urban trees provide a number of ecological, economic and social values; however, they can also pose risks and lability concerns when they fail. In Alabama increasing storm frequency and severity is enhancing the risks of tree failures, which hurricanes Sally and Zeta and countless tornados highlighted in 2020. Tree failures, most commonly seen during storms, can lead to injury and cause damage to public infrastructure and personal property. This can result in legal actions and negative implications for urban forest management. This study aims at describing how Alabama communities mitigate risks associated with increasing storm frequency and address liability concerns related to trees. The project employed a qualitative research process to elicit emergent themes. Interviews were conducted with participants directly associated with urban forest management in 22 Alabama communities of

varying sizes. Among the findings, themes underscored concerns that municipal employees relied heavily on residents for identification of tree risk, but that the average citizen has major limitations in identifying tree issues. Additionally, cities felt too overwhelmed in day-to-day tree maintenance activities to plan for preventative actions that are proven to reduce hazards. Lastly, findings suggested how the responsibility for damage due to tree failure is often separated from the responsibility for tree maintenance itself, raising questions about the adaptive nature of tree maintenance when repercussions for poor risk management are not directly felt.

11:45 – 12:05 – *Open conversations: finding ways to improve communication between family forest landowners and consulting foresters*
Speaker: Jace McCauley

Of Alabama's 23 million acres of forestland, an estimated 13.7 million acres are owned by family forest landowners. Therefore, family forest landowners play a pivotal role in the health, resiliency, and productivity of forests in Alabama. However, less than 30 percent of family forest landowners have used a professional forester, and less than 10 percent have a written management plan. The primary goal of this research is to improve communication between landowners and consulting foresters to increase landowners' awareness and usage of professional forest management.

More information is needed to understand why landowners are hesitant to employ consulting foresters and how satisfied landowners are with services provided by consulting foresters. Concurrently, feedback from practicing consulting foresters can give insight into their services and what landowners can do to help foresters better meet their needs. Therefore, the objectives of face-to-face interviews and webbased surveys are to collect consulting forester perceptions of their professional work, the forestry profession, and management and communication needs. Secondly, collect landowner perceptions of their management and communication needs and quality of service provided by consulting foresters with which they work. Results will provide insight into the consulting forester-landowner, dynamic and aid in reconnecting these parties through improved communication. Developing a better understanding of this relationship dynamic is crucial for navigating these issues. Consulting foresters are essential to the adoption of forestry practices by landowners. A mutual understanding between consulting foresters and landowners is needed in sustaining these crucial open conversations.

Glens Room 1: Use of Technology using Innovative Approaches — Podcasts & Photography
10:45 – 11:05 – *Reconnecting with Nature Through Podcasting*
Speakers: Lara Milligan, Shannon Carnevale

Faculty were seeking new and innovative ways to reach Extension clientele when webinars were saturating the internet during COVID. In Florida, residents are dependent on natural resources, but many are unfamiliar with the state’s ecology and ecosystems. “Naturally Florida” was designed to reach these people through short, research-based, and

environmentally focused podcast episodes. Faculty record, edit, and release episodes monthly with a total of 5,345 plays since launching on June 21, 2021. Topics covered to date include native and invasive species, stormwater, urban forestry, and fire ecology. The last five podcast episodes have an average download rate of 46 within seven days of release indicating performance better than 50% of podcasts on the market (https://www.thepodcasthost.com/planning/whats-a-good-number-of-downloads-for-a-podcast/).

Furthermore, faculty are reaching a more diverse audience than traditional natural resource Extension programs with greater reach among younger and more male audiences. The 23-44 age group and males make up 67% and 44% of listeners respectively. Podcasts are accessible via the computer or smartphone on a variety of free platforms. While challenging to evaluate, faculty released a special episode with a call for listeners to respond to a brief survey. This episode was listened to by 272 people and faculty received 19 responses for a 7% response rate with 95% of respondents implementing at least one behavior change to support local natural resources. As faculty continue to market and promote the podcast, more listeners will be reached with critical natural resource information, ultimately protecting, and enhancing the local environment. Learn more at www.naturallyfloridapodcast.com

11:15 -11:35 – *Think like a photographer: how to craft impactful images for natural resource communications*

Speaker: Maranda Miller

Images are incredibly important forms of communication in our work as Natural Resource Extension professionals. We use images to draw people to our programs, document our work, demonstrate environmental problems, educate, and to impact behaviors.

However, most of us aren't taught photography skills, and can struggle to get images that communicate the messages we're trying to share. It's often said that people that create nice images, "just have the eye" for photography, or that "they must have a nice camera", implying that it's just the machine that's responsible for a nice image. But what if I told you, it's not all about the photography equipment, or inherently "having an eye for it", that matters, but instead it's a way of thinking? And what if you could learn how to think so you can create impactful images too?

In this presentation, I will provide examples of imagery I create as an outreach specialist and conservation photographer to get you started thinking like a photographer. I'll reveal a few simple tricks you can learn to use your phone for photos, my tool of choice for my Extension communication images. Importantly, I'll demonstrate how planning how you'd like to use the image can greatly improve the photos you take. Plus, I'll touch on some photography basics to help you create visually appealing photos.

This talk is directed towards anyone taking their own images for communications. However, the information could also be applied to guide someone in selecting impactful images from a web search.

11:45 – 12:05 – *Natural Resources University: A collaborative podcast network with international reach*

Speakers: Jarred M. Brooke, Megan L. Gunn, Adam K. Janke, Marcus A. Lashley

In-person workshops, seminars, field days, and publications are staples of content delivery for extension professionals. But increasingly, especially in light of the COVID-19 pandemic, extension professionals are seeking alternative methods to disseminate science-based information to stakeholders. One such method is podcasting. We will explore the creation of a podcast network, Natural Resources University (NRU), as a method to disseminate natural resources information to landowners and land managers. We launched the NRU podcast network, a collection of four podcasts hosted by Extension Specialists at various land-grant universities, with a unifying theme of providing natural resource information to stakeholders. The four podcasts include Deer University, Fire University, Habitat University, and Pond University. Since its launch in December 2020, 62 episodes within NRU have received more than 124,000 downloads across all 50 states and 62 countries. A survey of Habitat University listeners (n=32 respondents) indicated the podcast reached a broad audience (hunters, private landowners, land managers, biologists, and other professionals). The survey also indicated 100% of listeners learned at least a moderate amount about habitat management from the podcast. Respondents owned or managed 30,990 acres and planned to apply the information they learned from the podcast to 80% of that land. By creating a podcast network, as opposed to four unconnected podcasts, we were able to extend the reach of each podcast and broaden the scope of information provided to listeners. Podcasting can effectively disseminate science-based natural resources information to various stakeholders and should be considered more broadly by extension professionals.

Glens Room 2: Innovative Approaches — Special Session/Workshop

10:45 – 11:05 – *Traditional and novel impact strategies employed by Extension natural resources programs – Part 1*

Speakers: Eli Sagor, Angela Gupta

Most Extension programs serving adult audiences use one of three strategies to achieve meaningful impact. They may be designed to increase outreach or volunteer capacity, to increase learner competency leading to behavior change, or to generate new data to inform research and practice. For example, many Master Volunteer programs build volunteer capacity to disseminate information and educate peer learners. Shortcourses, web-based decision support tools, and webinars are primarily designed to build knowledge and competency leading to changes in target behaviors. Citizen Science programs generate new data to help researchers answer emerging questions.

In the context of a facilitated discussion about Extension program design, we'll explore these three common program strategies, with examples including both "traditional" and more novel programs. We'll also discuss recent innovation and evolution within these general models, including mashups and novel combinations of these strategies. A particular focus will be how emerging technologies have opened new avenues for innovation leading to rapid

deployment and specific high-value impacts. These include early detection and mapping of invasive species and monitoring phenology and the status of rare wild populations. We will close with an open discussion of the learner perspective on these strategies in the context of the Master Volunteer Life Cycle.

Talks will be short, with at least 30 minutes for open discussion about participants' experiences and lessons learned from these strategies. The session will be of greatest interest to Extension professionals considering building new or renovating existing Extension programs to improve outcomes and impacts.

11:15 -11:35 – *Traditional and novel impact strategies employed by Extension natural resources programs – Part 2*
Speaker: Eli Sagor, Angela Gupta

11:45 – 12:05 – *H2OSAV: Water Savings, Analytics, and Verification*
Speaker: Nick Taylor

H2OSAV stands for Water Savings, Analytics, and Verification. It is a collaborative effort, born from the University of Florida/IFAS Program for Resource Efficient Communities and the need to quantify impact. To address that need, H2OSAV uses regularly updated data to understand water use in the past, address issues in the present, and share insights and trends for the future. This statewide Extension program is a powerhouse of partnerships. H2OSAV provides data analytics, research, and extension education that deliver tools and insights to utility providers, builders and developers, government agencies and Extension colleagues to facilitate data-driven decision making and improve water conservation efforts. The H2OSAV program has grown rapidly since its inception in 2016. H2OSAV currently houses data for over 20% of Florida's population, representing over 28% of the water used for public water supply in the state. This presentation will describe the approach, lessons learned and impacts of the H2OSAV program to date.

Glens Room 3: Partnerships/Collaborations/Stakeholders — Water/Water Resources
10:45 – 11:05 – *A road map to restoration: community driven watershed planning on a coastal sea island*
Speaker: Amy Scaroni

Like many coastal watersheds across South Carolina, the waterways on and around Edisto Island are affected by pollution from a variety of sources, with fecal bacteria being the primary pollutant of concern. High levels of bacteria have resulted in the closure of shellfish beds to commercial and recreational harvest, which affects both the economy and the deep historic and cultural traditions of the island. Clemson Extension partnered with South Carolina Sea Grant Extension, SC DNR, and a local land trust to assist the community in developing a watershed plan aimed at reducing bacterial pollution. Creating a community-driven watershed plan for the area was a first step towards reducing pollution and improving water quality for the Edisto community. However, creating a watershed plan was only the initial step; implementing

recommendations requires community buy-in, so the project team worked closely with community leaders and sought input from residents at each stage of plan development. We'll share our perspective on how we combined existing water quality data and GIS data layers with local community knowledge of the watershed to pinpoint pollution hotspots. We'll also share our lessons learned and highlight key communication recommendations to keep residents engaged and informed as implementation of the plan begins. The completed plan serves as a framework to address pollution sources and sets the stage for protecting the valuable shellfish resources at the heart of the community.

11:15 -11:35 – *Managing Stormwater in a Changing Florida Panhandle*
Speakers: Carrie Stevenson, Andrea Albertin, Laura Tiu, Sheila Dunning

The Florida Panhandle has the highest average total rainfall in the state (65"), with rain levels increasing in recent years. Limited and aging stormwater infrastructure has led to legacy water quality and flooding problems across the region. Local leaders and stakeholders need to better understand how development occurs, its impact on hydrology and water quality, and available solutions to mitigate impacts. UF IFAS Extension agents and specialists developed a regional stormwater education program for building technical capacity among stakeholders to incorporate sustainable stormwater management practices in their communities. Our audience included municipal employees, extension colleagues, professional engineers, landscape architects, and residents.

Programs included an in-person stormwater management workshop in 2019 (22 attendees) and a 2-part webinar series in 2020 (83 attendees) and 2021 (136 attendees). In 2021, 24 attendees received professional CEU's for attending.

Topics included hydrology and pollutant load dynamics, green infrastructure (GI) and low impact development (LID), local case studies, and funding opportunities, with stormwater infrastructure maintenance, permitting requirements, and planning tools added in 2020-2021. Workshops scheduled for May 2022 will include CEU credits and a collaborative design charrette.

Post-workshop surveys indicate that participants gained knowledge in one or more topics taught by attending our programs. A 5-month follow-up survey indicated that respondents valued the information they received, used the information in their line of work, and modified decisions related to stormwater management based on information presented.

The annual increase in participation and enthusiasm from stormwater professionals, along with innovative projects designed by those professionals in local municipalities, has shown that these workshops have achieved our objectives.

Prairies Room 4: Special Session/Workshop
10:45 – 12:15 – *Wildland fire issues, current programming, and a need for collective action (Ignite Style) – Part 1*
Speakers: Carrie Berger, John Rizza, Chris Jones, Jennifer Fawcett

Wildland fire issues are increasingly a pressing concern for ANREP members and the communities they serve across the country. Factors including climate change, expanding populations and development, and fire exclusion have contributed to conditions that allow catastrophic wildfires to cause human, environmental, and financial impacts unimaginable just five years ago. Meanwhile the need for fuel treatments, including the use of prescribed fire, is increasingly being recognized across the nation, not only to prevent these catastrophic wildfires, but to create and maintain healthy ecosystems.

Through ignite presentations and round table discussions, these two special sessions will explore the current and potential future roles Cooperative Extension can play in meeting community needs related to wildland fire. In the first 90-min session, we will frame up some of the issues and current programming through ignite style presentations. In the second 90-min session, we'll take a deep dive look into how our roles and programming should/has evolve(d) as the threat and impacts of wildfires have intensified in the last few years. Even though awareness is also increasing, and so is funding, the problem is so complex and novel that it requires new approaches, and money isn't enough.

Concurrent Session 4: Thursday, June 2, 2022 2 PM – 4 PM

Prairies Room 5-6: Invasive Species

2 – 2:20 – *Lymantria dispar dispar: An open forum for landowner education strategies*
Speaker: Julie Crick

Lymantria dispar dispar (formally known as the European gypsy moth) populations exploded in 2020 and 2021 across the North-Eastern United States and Canada. The defoliating caterpillar caused homeowner anguish over leaf-less trees while their droppings wreaked havoc on all outdoor activities. Many extension services were overwhelmed with calls from concerned people and spent hours relaying the same message countless times. If you were part of this cyclic outbreak, join us to learn about Lymantria dispar dispar outreach conducted by Michigan State University Extension followed by a discussion in which all affected extension representatives will have an opportunity to share their strategies for outreach and homeowner management of the naturalized invasive pest.

2:30 – 2:50 – *Invasive Species & Citizen Science: Solving Problems*
Speaker: Angela Gupta

The University of Minnesota Extension is a leader in citizen science and invasive species education and research. Starting during the spring of 2020 and continuing through 2022 several new, one-year, citizen science and invasive species projects launched. The projects are quick, timely, low budget and require minimal training. Each project had a different audience, objective and tools that uniquely fit each research question.

In 2020 projects included squill, jumping worm, Amur corktree, Norway maple and oak wilt. As a result of this work participants discovered the northernmost infestation of squill in the United States (as confirmed in EDDMapS); new infestations of Norway maple; photo confirmation that Amur corktree male trees, identified by flower sex, are producing fruit; and first trials for garden level jumping worm management.

In 2021 the Jumping worm: Report management project continued with additional information and emotional support. The Find and Report project hopes to inform policy; participants will look for escaped Japanese tree lilac, porcelain-berry, European black alder and Siberian peashrub. In the Mysterious Mulberries project volunteers work to better understand the distribution of native red mulberry and non-native white mulberry and to better understand the interplay between these two species.

The 2022 projects are still in development but will likely include: “motherworts”, highbush cranberries, Miscanthus, mock strawberry and butternut. The Jumping worm: Report management project will continue for another year. This presentation will highlight what was learned, worked and didn’t work. It will focus on the successes of the Amur corktree and jumping worm projects.

3 – 3:20 – *Growing Michigan aquarium and water garden retailers and hobbyists’ knowledge of aquatic invasive species through the Reduce Invasive Pet and Plant Escapes program*

Speaker: Paige Filice

Michigan State University Extension has been working in collaboration with state agencies to raise awareness of aquatic invasive species available in the aquarium and water garden industry. Non-native aquatic plants and animals introduced through trade pose a significant ecological and economic threat to Michigan waterways. To address this, we developed the research-based outreach program Reduce Invasive Pet and Plant Escapes (RIPPLE) to educate retailers and hobbyists about safe handling and disposal practices. Since 2015 over 125 pet and garden retailers, hobbyist clubs, nature centers, zoos and school districts have become RIPPLE partners. Partners receive aquatic invasive species identification and reporting resources as well as an outreach kit with materials for display and distribution. To ensure the program was meeting the needs of our primary target audience and to assess our outreach efforts we surveyed all independently owned pet and garden retailers in Michigan. The survey has been conducted twice, once in 2017 and again in 2022. The survey evaluated retailers' knowledge of aquatic invasive species, current behaviors, attitudes regarding their responsibility, and their willingness to participate in education programs like RIPPLE. Utilizing these survey results we are enhancing the RIPPLE program to empower our program partners and designing new outreach materials that align with their knowledge and behaviors.

3:30 – 3:50 – *Anticipating The Arrival Of An Unwanted*
Speakers: Amy Stone, Carrie Brown, Ashley Kulhanek, Kathy Smith

Invasive species come in all shapes and sizes. While their introduction can be geographically specific, we know that more often than not, populations increase and radiate in an outward direction. The spread of an invasive species can be compared to a forest fire - the initial detection, no matter the threat, grows and its expansion occurs in a contiguous manner. However, "sparks" can escape and new "hot spots" build and develop into novel and separate infestations.

Using the spotted lanternfly (Lycorma delicatula) as a case study, we will describe and explain Ohio's approach to its outreach and education plan prior to this planthopper's unwanted arrival and subsequently illustrate how changes were implemented with the first, and then the second, confirmed reproducing populations in the Buckeye State.

The session will include examples of our collaborations, how partnerships were formed, and sources of funding used to implement SLF awareness and prevention in Ohio.

Our SLF shared experience at the conference could be implemented in other states as is, but the process, or strategy, used can be applied as states face other invasives threats, including those posed by insects, diseases and plants. While we know no one eagerly awaits the arrival of any new invasive pest, we are sure our colleagues are eager to empower, engage and educate our own audiences and increase our own armies against invasives.

Glens Room 1: Forestry

2 – 2:20 – *Collaborative Placed- Based Woodland Owner Education to Support the Efforts of the Ohio Interagency Forestry Team*

Speakers: David Apsley, Leslie Horner

The Interagency Ohio Forestry team, a collaboration of Extension and all government agencies in Ohio with forestry in their mission, has developed a place-based woodland owner education series for Appalachian woodland owners focusing on Stewardship Opportunities, Selling Timber and Legacy Planning. These topics are being offered on a rotational basis in the 17-county project area. Collaborative teams were formed in 2-3 county "places" where coordinated programming will be initially offered on these three key topics. The goal is to offer at least one program in each "place" annually. Partners in the project include but are not limited to local â€" ODNR-Division of Forestry (State Service Foresters), Ohio State University and Central State University Extension (ANR Educators and Specialists), county Soil and Water Conservation District (Technicians), area Natural Resources Conservation Service (area staff) and ODNR-Division of Forestry (private lands biologists).

Curriculum development is iterative and is led by Cooperative Extension with input from all partners and selected woodland owners. Cooperative Extension provides training for partners, marketing materials (Local media, social media and direct marketing) and on-site assistance for each program. All curriculum and marketing materials are being developed using TELE - targeted marketing principals designed for specifically for working the land and woodland retreat owners. Peers and Pros - 360 conversational approach is being employed in field-based sessions.

2:30 – 2:50 – *Understanding and measuring woodland owner engagement*
Speaker: Kris Tiles

University of Wisconsin Extension has been conducting Learn About Your Land, beginner level classes for woodland owners, since 2008. The intent of these classes is to provide landowners basic skills to understand their woodlands and start to feel comfortable engaging with resource professionals. Sounds familiar, eh? But ALL our funders want to know: so what?

This session will cover three topics to answer that and engage in conversation around our theories and methods. Part one will introduce our models and understanding of landowner engagement over the past few years. Part two will cover our evaluation plan and methods. We have followed this plan regularly the last 13 years, but our questions have evolved to address our models. The last half of this presentation will engage attendees in conversation about concepts of landowner engagement, how we measure it moving forward, and what support Extension educators need to fully engage in impact evaluation of programs for woodland owners.

3 – 3:20 – *Feasibility study for evaluating the potential of biochar as an economically viable agricultural component in Michigan's bioeconomy*
Speaker: Nafisa Nowshin Ahmed

In the State of Michigan, 53% of land is covered in forests. The forest products industry is built upon 20 million acres of land with 150 registered foresters and more than 800 logging and trucking firms. However, in these forested lands, there is a significant proportion of non-

merchantable and low-value biomass left on the forest floors. These residues are of no use, but they do increase the risk of fire hazards and diseases. Our study aims to procure this biomass to produce biochar, specifically using logging and pulpwood residues, and create a framework for the supply chain process using transportation network analysis. We intend to conduct a life cycle assessment subsequently to analyze the potential environmental and economic impacts biochar leaves behind for landowners, foresters, and farmers in the industry. Biochar is a charcoal like substance produced through the decomposition of biomass in the absence of oxygen, which has shown to have great carbon sequestration potential. Our preliminary results have indicated that hauling time and distance heavily influence costs incurred during the transportation of biomass to a centralized biochar producing facility. In addition, competition for feedstock with biomass power plants, social and economic demography of a region also influence the demand and price for biochar in the market. Our research plans to explore how these components affect different stakeholders in the potential biochar industry. We expect to support landowners, foresters, farmers, and policy makers better understand the role of biochar towards building a sustainable bioenergy based circular economy in Michigan.

Glens Room 2: Horticulture & Environment

2 – 2:20 – *Improving soil moisture capacity with cover crops*
Speaker: Lee Riley

Cover crops reduce runoff losses, increase water infiltration, and can reduce nutrient loss. Soil moisture sensors were used to study cover crops impact on soil moisture and water extraction by cash crop roots. Research was conducted in two cotton fields, one field with cereal rye as a cover crop since 2016 and zero to minimum tillage, when tillage was conducted it was as minimum disturbance to the soil, only to rehip beds and clear furrows. The other field did not have a cover crop. Irrigation and rainfall inputs as well as irrigation and runoff loses and tailwater nutrient loses were measured from each field with automated edge-of-field monitoring equipment. Soil moisture sensors were placed at depths of 6, 12, 18, and 30 inches. Telemetry from soil moisture sensors showed more water available and less moisture variability at all depths in the field with cover crops vs. the non-cover.

2:30 – 2:50 – *Food Forests - Building Edible Community and Home Landscapes*
Speaker: Gary Wyatt

There is a growing interest in creating perennial edible landscapes for families and communities. People are familiar with community gardens, but have you heard of community food forests? A food forest combines trees, shrubs, vines, perennials and self-seeding annuals to produce vegetables, fruits and nuts. These plantings provide healthy foods while protecting soil and water resources and adding carbon to underutilized properties. Food forests can address the need for urban food security, resilient communities and productive public lands. Food forests are established almost anywhere but are commonly found in community green spaces and riparian areas. These plantings can also be designed for home landscapes. This presentation will discuss what a food forest is, examples of food forests, layout design, plants

producing edible fruits and nuts and resources to find more information. Learn more about Food Forests, edible landscapes and how you can be involved or educate others in your community.

3 – 3:20 – *Effectiveness of Floating Wetlands in Removing Nutrients from Tile Drains*
Speaker: Alaina Nunn

Recently published data indicates that agricultural tile drains may be the greatest single contributor of phosphorus delivery to Lake Erie. This research is being directed toward developing a novel approach to reduce nutrients leaving farm fields and entering tributaries. Two floating wetlands were constructed to determine the effectiveness of using floating vegetation mats and a filtration bed for removing nutrients from an agricultural tile outlet draining a 16-acre alfalfa field. The wetlands work as a treatment train with the first wetland using a surface water treatment of floating vegetation on mats and the second connected wetland using subsurface treatment with a sand and limestone mix as a filter media. Water samples are collected at 48hr intervals using an automatic sampler and drainage control structures to measure water flow, while concentrations of phosphorus (total and dissolved) and nitrogen are measured in the lab. Over a two-and-a-half-year period this system has shown a significant reduction of nutrients as water leaves the wetland, particularly during large rain events. This study has also indicated which plant species thrive best in this environment and uptake the highest amount of nutrients. As more is discovered about floating wetlands, it is hoped that this innovative approach can be used by producers in the future as a cost-effective method for finding a balance between critical food production and our delicate ecosystem.

3:30 – 3:50 – *A Model for Stewardship: Engaging the K - Gray Audiences in Salt Marsh Community Science*
Speakers: Kimberly C. Morganello, E.V. Bell

South Carolina is home to some 350,000 acres of salt marsh ecosystem. The salt marsh is ranked as one of the most biologically productive ecosystems on earth and provides many ecosystem services including flood control, nursery grounds for commercially and recreationally important fish and shellfish species, and filters pollution from the water. The salt marsh is currently threatened by sea level rise, development pressure, and pollution from stormwater runoff. The salt marsh is integral to the way of life in coastal South Carolina; therefore, involving and educating communities on stewardship and management of this habitat is crucial to its future protection. In 2011, South Carolina Sea Grant Consortium, in partnership with the South Carolina Department of Natural Resources and Clemson Extension, lead the development of "From Seeds to Shoreline®," a youth wetland restoration initiative in which K-12 students actively cultivate and transplant Spartina alterniflora, the dominant plant in southeastern salt marshes. Since that time, more than 7,500 students and teachers have participated in the program. In 2019, the program expanded to incorporate adult community volunteers and a citizen science component. In 2020, the South Carolina General Assembly approved a regulatory process for living shoreline installation, with a new industry on the horizon, a

training need was identified. Over the course of a decade, educational resources were developed to help residents better understand the salt marsh and how to manage and steward this resource for current and future generations.

Glens Room 3: Youth & Community Education

2 – 2:20 – *Wildlife Outdoor Leadership Focus (W.O.L.F.) Day Camp*

Speakers: Ronnie Cowan, Sheila Dunning, Laura Tiu, Jill Breslawski

Environmental science is a very broad topic. Wildlife Outdoor Leadership Focus (W.O.L.F.) Day Camp was designed to incorporate many environmental components for use by youth, volunteers, and agents alike. The camp focused on topics such as wildlife ecology, marine sciences, survival skills, and careers. In addition, these natural resource programs highlight the complexity of available natural resources and the connections to other fields of discovery like engineering. Objectives: As a result of this program, participants were able to 1) identify Florida wildlife and plants, 2) Demonstrate their knowledge of best management practices for wildlife, and 3) describe the complexity of natural resource management. Methods: The virtual 2020 W.O.L.F. Camp google site http://sites.google.com/ufl.edu/4-h-w-o-l-f-camp/home was utilized for activities and materials for the face to face 2021-day camp. Participants were broken into three groups. A team of Agents and 4-H Volunteers hosted stations that instructed participants on wildlife management techniques, nutrition/health, team work, art, and marine science. The three groups rotated ever forty minutes. Results: 31 participants enrolled in the 3-day camp. Camp evaluations were completed by every camper. Over 80% of participants reported a knowledge increase in concepts and identification of flora and fauna. Furthermore 90% considered the importance of teamwork. Participants self-assessed that their knowledge increased by 60%. Furthermore 100% indicated that they would consider their impact on wildlife habitat. Conclusion: The long-lasting impacts of W.O.L.F. Camp are high quality cross-discipline environmental educational content that can be replicated by Extension Agents for years to come.

2:30 – 2:50 – *Engaging 4-H youth in civic literacy with environmental projects*

Speakers: Sarah Davis, Martha Monroe, Kimberly Davis

CAPE (Community Action Projects for the Environment) is a 4-H program for youth 11-18 years old that helps them navigate the process of exploring, developing, implementing, and reflecting on a project that addresses an environmental issue affecting their community by engaging with decision makers to make a change that benefits everyone and sustains their environment. Closely linked to 4-H Life Skills, the program engages youth in exploring local environmental issues and community governance, then identifying an issue and project they can undertake. Rather than assigning youth (or their parents) with a task for a pre-determined service project, CAPE leads youth through critical thinking exercises to select a change they would like to see in their community and make a persuasive request of local decision makers.

A co-development team of leaders, agents, and specialists from UF and FAMU have worked together to create the curriculum, dramatically simplified from EarthForce, to match

the interests of youth and abilities of volunteer leaders. This presentation will introduce the program and highlight the projects that youth have undertaken in Sarasota, Leon, Hamilton, Alachua, and Duval counties in Florida. Let us know if you are interested in pilot testing this program in 2022-23!

3 – 3:20 – *Engaging Youth as Consumers at Farmers' Market*
Speakers: Amanda Bennett, Marcus McCartney, Alisha Barton, Amanda Bohlen

Farmers markets can be an exciting social event in a community and provide a tool to teach about local agriculture. A Junior Farmers Market was conducted 13 times in two counties for elementary students. The goal of the grant-funded markets was to provide opportunities for youth to make healthy food choices, try new vegetables, be introduced to shopping at farmers markets, encourage healthy purchasing habits and make connections with local producers. The markets were located on school grounds and attempted to replicate the atmosphere of a traditional farmers market. The youth interacted with local farmers at stations where fresh produce was available to "purchase" with wooden market coins. Partner agencies presented topics such as encouraging healthy drinks, hands-on activities for youth to explore where their food comes from and tasting new vegetables.

All programs were evaluated via surveys completed by the student, teachers, and parents. At one site a formal student evaluation was gathered utilizing a web-based survey administered to the students (n=137). Results of the survey showed 81% of the students ate produce purchased from the market and 58% stated they were excited about eating fruits and vegetables since participating in the Farmers Market and nearly 76% tried a new food at the market. Sixty-one percent responded they plan to attend a local farmer's market. An additional teacher survey revealed 100% agreed the program was a valuable tool in strengthening curriculum and one commented the event was a "great opportunity to promote agriculture in Ohio."

3:30 – 3:50 – *The Ochs Garden: A Blended Community Garden*
Speaker: Theresa Badurek

The Ochs (pronounced "oaks") Garden goal is a connected and diverse community teaching garden. Diversity can reflect culture, age, race, life experiences, and more. The Ochs Garden blends three groups: 4-H, Master Gardeners, and community members. The mission of the Ochs Garden is to provide fun, innovative urban agriculture education to Tampa Bay residents of all ages, backgrounds, and cultures while fostering a community built on teamwork, trust, and integrity. This program could be replicated anywhere appropriate for a community garden or an existing community garden. OBJECTIVES: Objectives of this program include building a community garden for the surrounding neighborhood, blending youth and adult gardeners, and utilizing Master Gardeners, extension faculty, and staff to educate. METHODS: An existing 4-H garden was reconfigured to create three spaces, an inground community garden for residents, a raised bed Master Gardener demonstration garden, and a container garden for 4-H education. Regular classes and tours are held for all ages, most open

to the community at large. Extension faculty and staff visit weekly to teach and observe. RESULTS: Extension faculty, staff and volunteers learned the social challenges of building a community garden. Leadership, conflict resolution, and communication skills are learned each growing season. Community gardeners have learned recommended gardening techniques demonstrated through observed behavior change. 70% of educational observations in 2021 have included behavior changes like proper pest control, weed identification, and proper watering. CONCLUSIONS: Blending a diversity of people into a community is complicated and often difficult but the positive outcomes outweigh the challenges.

Prairies Room 4: Special Session/Workshop

2 – 3:30 – *Wildland Fire Cafe: Fostering collaborative dialogue and active engagement to develop constructive possibilities for action – Part 2*

Speakers: Carrie Berger, John Rizza, Chris Jones, Jennifer Fawcett, Oregon State University

Wildland fire issues are increasingly a pressing concern for ANREP members and the communities they serve across the country. Factors including climate change, expanding populations and development, and fire exclusion have contributed to conditions that allow catastrophic wildfires to cause human, environmental, and financial impacts unimaginable just five years ago. Meanwhile the need for fuel treatments, including the use of prescribed fire, is increasingly being recognized across the nation, not only to prevent these catastrophic wildfires, but to create and maintain healthy ecosystems.

Through ignite presentations and round table discussions, these two special sessions will explore the current and potential future roles Cooperative Extension can play in meeting community needs related to wildland fire. In the first 90-min session, we will frame up some of the issues and current programming through ignite style presentations. In the second 90-min session, we'll take a deep dive look into how our roles and programming should/has evolve(d) as the threat and impacts of wildfires have intensified in the last few years. Even though awareness is also increasing, and so is funding, the problem is so complex and novel that it requires new approaches, and money isn't enough.