

EXTENSION & KNOWLEDGE EXCHANGE

Working party 9.01.03

Forest Knowledge Exchange: Advancing
Innovation with Tradition.

Conference Program



Conference
October 8-12, 2023
Padua, Italy
(Post Conference Tour - October 12-14, 2023 - Slovenia)

Conference Agenda

Sun 10/8/23	18.00 – 21.00	Welcome reception and social. Location: Hotel NH Padova
Mon 10/9/23	08.30 – 09.20	Opening Session Location: Hotel NH Padova
	09.20 – 10.20	Session 1: Program Development
	10.20 – 10.50	Break
	10:50 – 12.0	Session 2: Program Development
	12.00 – 13.30	Lunch
	13.30 – 15.30	Session 3: Program Development
	15.30 – 16.00	Break
	16.00 – 16.30	Session 4: Underserved Audiences
	18.00 – 20.00	Dinner with local forestry students (AUSF Italia/Padova) (Provided)
Tue 10/10/23	08.00	Meet at Hotel NH Padova then move to train station (Piazzale della Stazione, 35131 Padova PD) for train to Venice
	09.45 – 12.00	Archivio di Stato (Conference Attendees Only) San Polo 3002, Venezia
	12.00 - 14.45	Free time in Venezia
	14.45 – 15.00	Meet at Scuola Grande San Giovanni Evangelista di Venezia for Session 5 and 6 - Sestiere di San Polo 2454, Venezia (Conference Attendees Only)
	15.00 – 16.00	Session 5: Communicating Effectively
	16.00 – 16.30	Session 6: Transfer of Knowledge
		Dinner on your own : Free Time
Wed 10/11/23	7.30	Field Trip Departure. Location: Hotel NH Padova
	09.30 – 12.00	Visit Cansiglio Forest pt 1
	12.00 – 14.00	Lunch with typical food (Provided)
	14.00 – 17.00	Visit Cansiglio Forest pt 2
	17.00 – 19.00	Return to Padova
		Dinner on your own : Free Time
Thu 10/12/23	08.30 – 09.30	Session 7: Role of Extension. Location: Hotel NH Padova
	09.30 – 10.00	Break
	10.00 – 10.40	Session 8: Role of Extension
	10.40 – 11.30	Conclusions
		Post Conference Tour
Thu 10/12/23	14.00	Departure to Slovenia. Location: Hotel NH Padova
Fri 10/13/23		Karst region (fire management and post fire restoration), visit the Škocian cave UNESCO world heritage site (lunch and dinner)

Sun 10/8/23	18.00 – 21.00	Welcome reception and social. Location: Hotel NH Padova
Mon 10/9/23	08.30 – 09.20	Opening Session Location: Hotel NH Padova
	09.20 – 10.20	Session 1: Program Development 250 years of forest management (Trnovski gozd – 250 years of fir-beech mountain forest management), Urban forests (end of tour late afternoon in Gorizia)
Sat 10/14/23	Late afternoon	

Conference Theme

Professionals who work with stakeholders on education and knowledge exchange have a plethora of new and emerging educational technology tools at their disposal today. Flipped classrooms, online learning management systems (OLMs), virtual reality and other high technologies are expanding and enhancing our ability to reach new and current audiences with vastly different educational experiences than we had access to even just a few years ago. We value these tools but also the customs and traditions that come with local and indigenous knowledge and stakeholder involvement. This conference aims to present, highlight and focus on the blending of our new tools and technologies with the inclusion of local information and tradition.

Presentation Schedule

Monday, Oct 09		
8:30 – 9:20	Bill Hubbard, USA Antonio Brunori, Italy	Welcome and Overview
Program Development		
9.20 – 9.40	Jennifer Fawcett, USA	Applying adult learning principles to Extension forestry programs
9.40 – 10.00	Todora Rogelja, Italy	Bridging the education–practice gap through the forthcoming Massive Open Online Course (MOOC) on Gender equality and diversity in forest-related sectors (forGEDI)
10.00 – 10.20	Carrie Berger, USA	Developing a professional fire manager program: integrating credit, professional development, and Extension elements
10.20 – 10.50	Break	
10.50 – 11.10	Janice Sitzes, USA	Establishing a service center for improved deliverability and increased profitability of forestry extension programs
11.10 – 11.30	Andreja Nève Repe, Slovenia	Educating forest professionals and forest owners for control of invasive alien plant species in forests
11.30 – 11.50	Darryl Outlaw, USA	The Ins & Outs of Designing Digital Forestry Outreach Tools & a Montage of Useful Apps, &

		other IT Tools
11.50 – 11.55	Leslie Boby, USA	Debuting a new step-by-step guidebook for prescribed fire for landowners
11.55 – 12.00	Calvin Norman, USA	The forest owner carbon and climate education program
12.00 – 13.30		Lunch Break
13.30 – 13.50	Abigail Ratcliff, USA	Making connections: creation and standardization of forest health specimen collections
13.50 – 14.10	Aleš Poljanec, Slovenia	Forestry extension in Slovenia: Current situation and future perspectives
14.10 – 14.30	Krista Merry, USA	OLAF: The Online Learning in Applied Forestry Education Tool
14.30 – 14.50	Bill Hubbard, USA	Program model to educate small-acreage woodland owners and service providers
14.50 – 15.10	Arnold Brodbeck, USA	Understanding the motivations and barriers to arborist certification among tree workers
15.10 – 15.30	Carrie Berger, USA	Oregon State University Extension Fire Program honoring tradition, but far from traditional
15.30 – 16.00	Break	
Underserved Audiences		
16.00 – 16.05	Teki Surayya, India	Role of Non-Wood Forest Products (NWFPs), Eco-tourism and Financial inclusion in Reducing the Poverty and protecting forest - case studies-India
16.05 – 16.10	Renee Strnad, USA	Expanding audience reach and impact with woman-focused forestry programming in North Carolina
16.10 – 16.30	Kurt Smith, USA	The problem of heirs property and the role of succession planning in preserving small family forests in the United States
18.00 – 20.00		Dinner with local forestry students (AUSF Italia/Padova)
Tuesday, Oct 10		
08.00		Transfer in train to Venezia
09.45 – 12.00	Antonio Brunori, Italy	Archivio di Stato
12.00 – 14.45		Free time in Venezia
14.45 – 15.00		Meet at Scuola Grande San Giovanni Evangelista di Venezia
Communicating Effectively		
15.00 – 15.20	Courtney (Smith) Johnson, USA	Pools and tree bounties: Using appealing messages to educate the public about invasive species

15.20 – 15.40	Savannah Jones, USA	Engaging your audience through social media: Tips and tricks for Extension
15.40 – 16.00	Renee Strnad, USA	Sustaining forestry and wildlife 4-H youth programs in North Carolina
Transfer of Knowledge		
16.00 – 16.20	Leslie Boby, USA	Creating New Markets is a Team Effort: Knowledge-Sharing & Connections Amongst Diverse Stakeholders
16.20 – 16.25	CIndy Chen, USA	Reviving the forest products industry with innovative wood products
16.25 – 16.30	Milan Sarvaš, Slovakia	Transfer of knowledge for EU candidate country
Wednesday, Oct 11		
7.30 – 19.00		Field Trip - Cansiglio Forest
Thursday, Oct 12 Role of Extension		
8.30 – 8.50	Kim Ingram, USA	Empowering Forest Landowners Through Stewardship and Education
8.50 – 9.10	Kelly Oten, USA	Generation xtension: training the next generation of extension professionals
9.10 – 9.30	Susie Kocher, USA	Helping private forest landowners recover from wildfire
9.30 – 10.00	Break	
10.00 – 10.20	Alicia Christiansen, USA	Lessons learned from post-wildfire outreach to family forestland owners in Oregon
10.20 – 10.40	Paul Butler, Ireland	The promotion of farm forestry in Ireland
10.40 – 11.30	Bill Hubbard, USA Francesco Marini, USA	Closing/Business Meeting

Abstracts

Program Development

Berger, Carrie, Oregon State University

Developing a professional fire manager program: integrating credit, professional development, and Extension elements.

The US government has prioritized growing the US firefighter workforce and increasing the pace and scale of fire mitigation efforts. The professionals managing wildland fire and prescribed fire programs in the United States, however, face challenging work environments. Fire environments have been altered by long-term fire suppression and past management practices, climate change has amplified fire weather conditions and extended fire seasons, and human development of and into fire-prone ecosystems has complicated fire response efforts. To be successful these professionals need to be more than fire suppression experts - they need to be knowledgeable in a broad array of ecosystems, competent leaders and managers, skilled managers of budgets and projects, well versed in risk management, and, ultimately, effective decision makers. The US Bureau of Land Management and Forest Service are collaborating with Oregon State University to expand its scope of education and training programs to better prepare existing, and upcoming new, fire program managers for work in the modern fire world. The scope of need demands an integrated system of academic courses with degree and certificate options, professional development opportunities, and Extension outreach. This presentation will offer observations on the opportunities such integration offers, but also the challenges Extension personnel may face when attempting such an endeavor.

Co-author: John Punches, Oregon State University

Berger, Carrie, Oregon State University

Oregon State University Extension Fire Program honoring tradition, but far from traditional.

In the last decade, there have been many extreme wildfire events around the world. Today's wildfires are bigger, more intense, and start earlier & last longer. Climate change is a key factor contributing to the severity and extent of these recent large-scale incidents. However, human actions also have increased the fire problem. Wildfire is a critical global issue that needs urgent solutions. Given the complexities of the changing times, Extension has been called upon to rise to some of society's most wicked challenges, including wildfire. Oregon State University Forestry & Natural Resources Extension, USA, honors the traditions of Extension that ground us in the work we do and expands on that tradition by developing an Extension Fire Program that 1) helps whole communities prepare for fire, 2) fosters improved landscape fire resiliency, and 3) addresses equity and environmental justice in wildfire. The OSU Fire Program works at large scales serving whole communities and landscapes and goes beyond Extension's traditional audiences by focusing on underserved populations. We design and implement educational opportunities that offer shared experiences and learning; creating new connections and pathways to action. Using trauma-informed care, the Fire Program daylights the importance of collective action and that everyone – in every community and land ownership - is part of the wildfire solution. This talk highlights the Fire Program and provides examples of the diversity of work we do, including supporting efforts to acquire nearly \$10M in assessment and implementation funding.

Boby, Leslie, Southern Regional Extension Forestry

Debuting a new step-by-step guidebook for prescribed fire for landowners.

Conducting prescribed fires in the United States is critical for reducing hazardous fuels, maintaining wildlife habitat and as a forest management tool, but it can be very intimidating, especially for forest

landowners. While each state has slightly different recommendations and requirements for prescribed burners, this guidebook was developed to encompass the thirteen states of the southern region of the U.S. The guidebook was developed with four action sections, getting started, planning, conducting and evaluating, as well as other more in-depth informational sections (weather, fuels, smoke management, and fire behavior). Each action section starts with checklists of steps involved in the process, then includes more detailed descriptions of each of the components in the checklist. This full-color 200+ page guidebook is full of diagrams, pictures and more to help convey often complex topics for a wide audience. In this poster presentation, learn more about the components of the guidebook, its development process and how it can be used.

Co-author: Jennifer Fawcett, North Carolina State University

Brodbeck, Arnold, Auburn University

Understanding the motivations and barriers to arborist certification among tree workers.

Tree workers who are not current on the science of urban forestry may engage in actions leading to poor tree care, which shortens longevity and the ecosystem services that trees provide. Despite the benefits of certification, many communities in the U.S. have few, if any, credentialed commercial tree-care companies, consequently there is a need to recruit more tree-care workers to become certified and operate within industry-accepted standards. To this end, information is needed about motivations, barriers, and opportunities commercial tree workers place on certification. Increasing the number of certified arborists requires an understanding of why tree workers become certified and why others fail to pursue certification. The research employed a mixed methods approach using a qualitative approach to elicit emergent themes followed by a survey. Study results illustrate there are few economic incentives to pursue certification due to most clients being unaware of its value. Instead, certification is driven by combinations of company cultures seeking greater professionalism and arborists viewing certification as a pathway to increase knowledge, skills, and confidence in the field. Others discussed difficulties in traditional education and testing required for certification. Understanding these motivations and barriers can improve educational and outreach efforts to encourage adoption of certification programs.

Co-author: Jason Gordon, University of Georgia

Fawcett, Jennifer, North Carolina State University

Applying adult learning principles to Extension forestry programs.

Extension professionals began targeting adult audiences through Extension programs more than a century ago, and adult education is just as important today as it was then. As an Extension professional, it is important to understand adult audiences and their educational needs in order to provide the most effective programs. Andragogy, an adult learning theory, is based on six principles of adult learners. These principles suggest that adults' learning needs differ from those of children and young adults. Therefore, andragogical process design elements should be integrated into the curriculum for adult learners since a standardized approach with a pedagogical design will likely be ineffective. This presentation will provide an overview of the six andrological principles, and some examples of how they have successfully been incorporated into Extension forestry programs for adult learners throughout North Carolina, USA.

Hubbard, Bill, University Maryland Extension

Program model to educate small-acreage woodland owners and service providers.

Over 60 percent of private woodland parcels in the United States are 1-9 acres but represent only 6% of the land area. In urbanizing states it can be over 80% of parcels and 20% of land area. The question is: What can and is Forestry Extension doing to educate small-acreage owners to assist them to implement sustainable outcomes for their properties?

The Woods In Your Backyard (WIYB) Partnership is composed of Maryland, Pennsylvania, and Virginia extension organizations, Alliance for the Chesapeake Bay, and Virginia and Maryland state forestry agencies, and provides a logic-based program model.

The WIYB guide first published in 2006 and revised in 2016 provides a tool for landowner self-assessment and woodland management planning. Finding service providers is challenging because professional foresters do not traditionally work on small-acreage properties that lack commercial timber management opportunities. In 2018, the WIYB Partnership developed a training program for green industry professionals to learn how to provide the woodland services for existing natural areas and lawn conversion for small-acreage owners. The project produced three quality print publications, three webinar training series in 2020-2022, an online service directory, and train-the-trainer workshop to share the program with other educators. Impacts have been well documented and impressive. The presentation will discuss program results and opportunities for targeting small-acreage woodland owners and developing service providers to meet their needs.

Co-author: Jonathan Kays, University of Maryland Extension

Merry, Krista, University of Georgia

OLAF: The Online Learning in Applied Forestry Education Tool.

The Online Learning in Applied Forestry (OLAF) system has been developed to provide students, professionals, landowners, and the general public with a freely available platform to learn about land and tree measurements through an Internet-based, self-paced service. This presentation will describe the development of OLAF, the content available, and OLAF's effectiveness following a multi-survey assessment. OLAF complements college-level undergraduate courses in forest measurements, land surveying, forest mensuration, and forest economics but can also serve as an informative platform for small and medium-sized landowners. A recent assessment of the effectiveness of OLAF in improving the skills and knowledge of system participants has been completed. It was conducted by exposing students enrolled in a university-level forest measurements course to the system prior to lecturing on the topics. We hypothesized that the OLAF system would be effective in improving the knowledge and confidence levels of students interacting with the system. We also sought to better understand users' preferred methods of assimilating knowledge given the digital technology available today, what functionality of the site was helpful in helping users learn concepts, and what improvements could be made to OLAF to encourage users to return to the site. Finally, we will discuss efforts to expand the OLAF system, including the addition of new course content, ways to encourage contributions from users, and a plan to conduct future assessments of the system based on the opinions of forestry professionals.

Co-authors: Pete Bettinger and Taeyoon Lee, University of Georgia

Nève Repe, Andreja, Slovenia Forest Service

Educating forest professionals and forest owners for control of invasive alien plant species in forests.

In recent years, frequent natural disasters and subsequent bark beetle attacks have caused vast damage in a large part of Slovenian forests. Forest openings made after the sanitary logging create conditions in which alien invasive plant species can establish and thrive. Some of this species spread rapidly and have a negative impact on local species, ecosystems and natural processes in the forest. Controlling invasive alien species and preventing new introductions are essential to ensure close-to-nature forestry and maintain health of forests. As part of the project "Protection against invasive alien plant species in forests", financed by the Climate Change Fund of Republic of Slovenia the Slovenia Forest Service has focused on the education of forest professionals and forest owners about harmful impacts of invasive alien plant species. The project communication plan was prepared. Within the plan preparation the education objectives and key communication messages were defined, education concept and webinar scenario were developed as well as target groups and communication channels were identified. Three trainings for forest professionals and three trainings for forest owners were

conducted in the years 2022 and 2023. Additionally, workshops for the general public and schoolchildren were carried out. An online seminar (webinar) with educational content for interested public and stakeholders was produced to prevent and manage invasions of invasive alien plant species in the forest. In the presentation, results of the project and lessons learned will be outlined and discussed.

Co-authors: Andreja Gregorič and Marija Kolšek, Slovenia Forest Service

Norman, Calvin, Penn State University

The forest owner carbon and climate education program.

Opportunities for forest owners in the United States to engage in climate change mitigation have increased due to the recent emergence of forest carbon markets targeted at family forest owners. Few forest owners, and the professionals they work with, are familiar with these opportunities. Extension forestry programs are important for bridging the knowledge gap that prevents people from understanding the threat posed by the climate crisis, the role they play in stopping the crisis, and how they can interact with carbon markets. To close this gap, thirteen land grant universities and three USDA Climate Hubs launched the Forest Owner Carbon and Climate Education (FOCCE) program. This program facilitates basic literacy in forest carbon and climate issues in forest owners and professionals, providing access to new and existing tools and resources, and reaching underrepresented categories of forest owners. At this talk, we will present the programs and resources provided by the FOCCE program and discuss opportunities for extension educators. Resources include over 20 extension articles addressing topics such as: managing forest carbon, forest carbon incentives, and planning for climate-smart forestry, as well as a booklet for extension educators. We will also introduce an online professional course that prepares educators to answer critical questions most forest owners have about carbon markets. The course is offered twice a year and includes four modules delivered over four weeks. All resources are available at no cost.

Co-author: Melissa Kreye, Penn State University

The Ins & Outs of Designing Digital Forestry Outreach Tools & a Montage of Useful Apps, & other IT Tools

Outlaw, Darryl, Southern regional Extension Forestry

Forestry outreach in a digital form is more than just a website. For nearly 20 years, the Southern Regional Extension Forestry Information Technology (IT) team has worked with forestry partners to co-create dozens of websites, apps, and other digital tools. In this presentation, we will discuss what you need to consider when designing a digital tool, from idea to development to maintenance. Projects start with a forestry professional defining an idea or need, but they are developed after scanning for existing tools, clarifying the need, determining the project's feasibility, and defining roles. Building the tool is only one of the steps, as content needs to be added, and systems need to be developed to maintain the tools. In addition, we will provide a flash overview (montage) of some of our resources, directories, decision support tools, and mobile applications. Some of the IT tools covered include a one-stop shop webinar portal, a comprehensive seedling and nursery directory, a grant submission & review portal, an emergency locator app and a decisions support tool for small forest landowners.

Co-author: Danniell Drummund, Leslie Boby, Southern regional Extension Forestry
Poljanec, Aleš, Slovenia Forest Services

Forestry extension in Slovenia: Current situation and future perspectives.

Forestry extension plays a crucial role in the sustainable forest management and the promotion of their ecosystem services. Slovenia has a long tradition of forestry extension, dating back to the early 20th century when the first forest education centers were established. Today, forestry extension in Slovenia is mainly carried out by the Slovenian Forest Service, which provides a wide range of services to forest owners and other stakeholders. The main objective of forestry extension in Slovenia is to promote

sustainable forest management practices, safe work in forest and to ensure the conservation and enhancement of forest biodiversity and ecosystem services. This is achieved through the provision of information, education, training, and advisory services to forest owners and other stakeholders, as well as through the development and implementation of innovative forest management practices. One of the key challenges facing forestry extension in Slovenia is the need to adapt to the changing social, economic, and environmental conditions. The increasing demand for wood products, the growing importance of non-timber forest products, and the need to address climate change are some of the main drivers of change in the forestry sector. To meet these challenges, a more integrated and multidisciplinary approach, which combines traditional forestry knowledge with modern scientific and technological innovations should be introduced. The variety of extension tools and innovative approaches as well as extension activities within SFS for the last three decades will be presented and discussed.

Co-authors: Jože Mori, Slovenia Forest Service; Jurij Beguš, retired expert

Ratcliff, Abigail, North Carolina State University

Making connections: Creation and standardization of forest health specimen collections.

Biological collections underpin a variety of research. However, within an institution, collections are often confined to a single taxon. Forest health sits at the intersection of the host plant and the causative agent. Forest health specimens are an integral part of educating the public which serves as the front line of detection. Outreach and informal education programs use specimens to hone search images in the public mind. Programs and resources like these are invaluable to identifying concerns - as evidenced by the homeowner detection of the spotted lanternfly in North Carolina. Formalization of forest health collections may be an important next step in improving communication with the public and between institutions. Many forest health specimens are personal collections assembled for use in public events and are rarely cataloged. Building collections connected through a shared catalog can generate and preserve a wealth of forest health information absent from existing collections. Standardizing best practices for collection and preservation would enable cross-institutional trade and facilitate large-scale data analysis. The creation of best practices would improve the quality and breadth of specimens generated for educational use and make well-curated specimens available quickly to areas facing new invasions. We are investigating building a framework for these collections as a first step toward connecting and improving forest health information flow and collaboration in the southeastern United States.

Rogelja, Todora, University of Padova

Bridging the education–practice gap through the forthcoming Massive Open Online Course (MOOC) on Gender equality and diversity in forest-related sectors (forGEDi).

Gender equality and diversity are crucial elements of sustainability transitions that are gaining increasing attention (e.g. SDG5). Despite the rising importance, gender equality and diversity remain underrepresented in forest curricula, partially due to gender insensitivity, or a limited number of competent educators and trainers worldwide. Hence forestry professionals with limited capacities to assess, articulate, and address gender and other social inequalities embedded in forestry and forest-related domains (e.g. bio-economy, agriculture). Such a serious mismatch compromises the relevance of forest science education and forestry practices across the globe, as voiced through the International Forestry Students Association Open Letter. The IUFRO Task Force (TF) on Gender Equality in Forestry strives to reduce that educational gap by developing the first Massive Open Online Course (MOOC) on Gender Equality and Diversity in forest-related sectors (ForGEDi) under the sponsorship of SLU Global and the University of Padova. Since the COVID pandemic, training and education changed with a drastic increase in online education. This represents an opportunity to make the best competencies within the IUFRO TF openly available. Due to the module-based structure, ForGEDi materials will be easily adaptable to be integrated into universities' own curricula. The practical learning outcomes will also facilitate the use of materials by professionals in vocational education and training. The MOOC will be offered via the FutureLearn platform, in English starting in March 2024.

Co-authors: IUFRO Task Force on Gender Equality in Forestry (Ida Walin, Gun Lidestav, Jonas Rönnberg, Maria Johansson and Elias Andersson, Swedish University of Agricultural Sciences; Maureen Reed, University of Saskatchewan; Abwoli Yabezi Banana, Makerere University; Kalpana Giri, Center for People and Forests (RECOFTC); Carol Colfer, CIFOR; Ananda Virginia de Aguiar, Embrapa Florestas; Leida Mercado, CATIE; Kelly Cooper, Centre for Social Intelligence; Barbara Öllerer, Alice Ludvig and Ivana Živojinović, University of Natural Resources and Life Sciences (BOKU), Austria; Rossana Catie Bueno de Godoy, Embrapa Florestas, Brazil; Pipiet Larasatie, University of Arkansas at Monticello; Yashmita Ulman, Narendra Deva University; Stephen Wyatt, Université de Moncton, Eric Hansen, Oregon State University; Julieta Mazzola, EARTH University; Raquel Álvares Leão, Brazilian Forest Service; Wasiul Islam, Khulna University; Susanne Koch, Technical University of Munich; Juliet Achieng, European Forest Institute; Edwards Peter, Manaaki Whenua Landcare Research, New Zealand; Pil Sun Park, Seoul National University; Teppo Hujala, University of Eastern Finland; Theresa Klara Loch, University of Freiburg; Labidi Arbia, FAO; Rodriguez Pineros Sandra, Autonomous University of Chihuahua; Laura Secco and Michela Zanetti, University of Padova

Sitzes, Janice, North Carolina State University

Establishing a service center for improved deliverability and increased profitability of forestry extension programs.

A recent trend from funding agencies is the requirement of broader impact components in research grants. These broader impact components often require conducting workshops or similar activities. Research shows that resources to support the broad impact component in grants are lacking at all levels, including individual and institutional levels. In addition to the lack of resources, Extension professionals and faculty are also often constrained by time due to other, often higher, priorities. To help overcome these constraints, NC State University College of Natural Resources established the Office of Continuing and Professional Education (CPE). CPE is a fee-for-service entity that takes care of the planning and logistical details associated with carrying out outreach activities, such as conferences and workshops. CPE provides a range of services, including the researching and arranging of venues, catering and transportation, marketing, registration management, financial management, and overall program execution. Utilization of the service center enables Extension professionals and others to focus on content and the actual delivery of programs, and less on the logistical aspects necessary to carry out the outreach activity. This presentation will highlight the benefits of utilizing a service center, things to consider when developing a service center, and resources and tools that will contribute to the efficient running of a service center.

Co-authors: Robert Bardon and Shelly English, North Carolina State University

Underserved Audiences

Smith, Kurt, North Carolina State University

The problem of heirs property and the role of succession planning in preserving small family forests in the United States.

In the United States the majority of forestry land is in private family land holdings, this is particularly true east of the Mississippi river. Many local and regional economies are dependent on these small family owned forests which average 29 acres in size to supply them with the needed raw materials to produce a wide array of forest products. Fragmentation of these lands through development, and a legal process known as partitioning, continue to remove forest properties from the forest inventory. Partitioning is an avoidable process and most frequently occurs on property known as "heirs" property where co-tenancy has created the most vulnerable form of land ownership within the United States legal system. Minority communities and in particular African American landowners are disproportionately heirs property owners which adds a layer of complexity, and has implications relating to environmental justice issues.

Communicating and educating on this issue effectively is a key to achieving prevention, and remediation relating to the problem of heirs' property and succession planning.

Strnad, Renee, North Carolina State University

Expanding audience reach and impact with woman-focused forestry programming in North Carolina.

Data from the 2018 National Woodland Owner Survey in the United States shows an 8% increase in women being the primary owner of family forest land from 2006 to 2018, thereby making decisions for close to 57 million acres (2.3 billion hectares) of forest land across America. Women also represent a large majority of joint ownerships, with potential to contribute to management decisions and activities on many more millions of acres. However, research has shown that women are less likely than men to participate in forest management activities. NC State University has provided woman-focused programming in the past and continues to develop and promote forestry educational programming that is designed to be more inclusive of women. This presentation will highlight the need for this type of focused programming, share past programming offerings, and highlight current programs and evaluation data.

Surayya, Teki, Adikavi Nannaya University

Role of Non-Wood Forest Products (NWFPs), Eco-tourism and Financial inclusion in Reducing the Poverty and protecting forest - case studies- India.

Poverty is one of the Universal problems. A number of socio-economic welfare schemes, IRDP, MGNREGA, JFM, etc. have been implemented in India. Poverty is vulnerable amongst forest living communities (FLCs), due to lack of income generating activities, exploitation of moneylenders etc. FLCs get about 28% to 50% of survival amount from NWFPs, which is only about 20% of consumer price spread, due to lack of value additions to harvested NWFPs, which may be increased 50 - 70%, if value additions undertaken by FLC. Availability of Microfinance (financial inclusion) for value additions is a problem. NWFPs trade is seasonal, to fulfill needs FLCs have to borrow money at high interest 2% to 4% per month, or NWFPs distress sale agreement. Advent of Microfinance is proving as a strategy to reduce poverty by providing microfinance for NWFP value additions and in need by themselves. FLCs get 38% of microcredit requirements from SHG. Studies show that small value addition like making leaf plates can give incrementally more than 100%. The Governments/Multilateral agencies interventional efforts are supplemented by NGOs, in educating FLCs about the importance of NWFP facilitating in value addition and providing them market linkages for the value added NWFPs trade. Thus increasing income to uplift FLCs from poverty. In turn this will contribute to natural forest protection.

Communicating Effectively

Johnson (Smith), Courtney, North Carolina State University

Pools and tree bounties: Using appealing messages to educate the public about invasive species.

Invasive species lead to the extinction of native plants and animals, reduce forest productivity, and cause extensive economic losses. Early detection of invasive species is critical for management. Often, new detections come in the form of reports from the general public. To report invasive species, the public must understand the threat of these species and how to recognize them. Poolside Pests and the Bradford Pear Bounty are two Extension programs in North Carolina, USA focused on raising awareness about harmful invasive species. Poolside Pests encourages people to check their pool filters for the Asian longhorned beetle and spotted lanternfly, two insects that threaten the forests and economy of NC. Similarly, the Bradford Pear Bounty raises awareness about a tree species by incentivizing citizens to replace their Bradford pear trees with free native trees. With the use of appealing messages, these programs have reached thousands of people. Poolside Pests focuses on pools, but its reach has

extended beyond pool owners as the appeal of the program has allowed us to speak at home shows and pool companies. Likewise, the Bradford Pear Bounty utilizes a tree replacement program to grab attention and educate people about the invasiveness of the Callery 'Bradford' pear. As a result, it has reached hundreds of thousands of people on social media. These programs illustrate successful cases of using memorable attention grabbers to magnify the true goal of awareness and education about forest health issues, allowing citizens to find, report, and/or remove invasive species.

Co-author: Kelly Oten, North Carolina State University

Jones, Savannah, North Carolina State University

Engaging your audience through social media: Tips and tricks for Extension.

NC State Extension Forestry, like other Extension organizations, has turned to social media to educate larger audiences for the betterment of the natural environment. To determine the effectiveness of using social media, an analysis of NC State Extension Forestry's social media platforms was conducted. Results suggest a set of four best practices to improve one's reach. These include developing an efficient content scheduling system, scheduling content a week in advance, saving all content made, and performing quarterly metrics checks. Maintaining a high response rate by collaborating with similar organizations, keeping your message personal, and highlighting employees are successful practices to include. Lastly, understanding the key factors to craft an organization's presence such as the timeliness of posts, relevance of content, algorithm support, and number of posts is critical. Overall, it was found that shares are the most important metric for an outreach organization. While consistently high numbers of likes, comments, and followers are valuable, sharing creates the space for one's audience to share with their audience and so on, thus allowing an organization to reach as much of the public as possible. Presenters will share findings of the social media analysis as well as cover strategies that Extension professionals can use to be more efficient in their use of social media.

Co-authors: Robert Bardon and Renee Strnad, North Carolina State University

Strnad, Renee, North Carolina State University

Sustaining forestry and wildlife 4-H youth programs in North Carolina.

4-H is a youth organization based at land-grant universities in the United States. It is the largest youth organization in the country with more than 6 million youth participants and over 3,500 adult 4-H professionals nationwide. North Carolina State University Extension Forestry has been the home of two statewide programs for over 20 years; the Forestry Invitational and the Wildlife Habitat Education Program (WHEP). With numerous programs that youth can be involved in North Carolina, this presentation will share how we continue to reach and support youth interested in learning about forestry and wildlife across the state.

Transfer of Knowledge

Boby, Leslie, Southern Regional Extension Forestry

Creating new markets is a team effort: Knowledge-sharing & connections amongst diverse stakeholders.

Creating new mills and expanding existing ones is the culmination of work done by forestry stakeholders as well as economic developers & more. Each has their own knowledge that contributes to the process, but there is often a gap between the two. In addition, ongoing retirements and employee turnover across multiple agencies threaten existing connections amongst these stakeholders. Learn about efforts to bridge these knowledge gaps and create new connections through a series of interventions from cross-sector meetings, to a community of practice and ongoing development of helpful tools. While demand for

new forest products is one part of the process of increasing or creating new forestry markets, there are extensive logistics and data that are needed in order to select sites for new mills or expand existing mills. Creating multiple connections amongst these stakeholder groups through meetings, working groups and tools can help bridge these knowledge gaps and facilitate development. Lastly, creating multiple points of connections across these stakeholder groups is important for ensuring that institutional knowledge is retained and relationships are maintained, even when individuals retire or move on to new positions.

Chen, Cindy, University of California Cooperative Extension

Reviving the forest products industry with innovative wood products.

Wood and woody biomass have been applied in constructions and agriculture for hundreds, or even thousands, of years. Traditional ecological knowledge values optimal use of every plant, however, modern commercialized wood products industry focuses on high-value raw materials (e.g., roundwood) and generates vast amounts of wastes. As challenges such as climate change emerges, wood-based products have been recognized as a sustainable alternative to energy-intensive materials, bringing opportunities the forestry sector. The forest products industry in many places may be revived by incorporating innovative products and maximizing resources utilization. While the development of new products is often the primary form of innovation for large-scale businesses, mid- to small-scale firms usually incorporate innovations through enhancing existing products and processes using new technologies, which are easier to realize. Mass timber, biofuel, and bioenergy are some of the examples that transform traditionally available products or resources into innovative products to meet today's needs. This has brought new challenges, for instance, the lack of well-trained and highly skilled workforce, public acceptance of new products, and the costs to incorporate innovative products. The role of extension programs becomes increasingly important in helping to address and solve these issues through partnerships with local schools and businesses, wood processing facilities, policy-makers, etc. Nowadays, extension programs need to focus more on mutual-learning instead of merely "teaching" the public.

Sarvaš, Milan, National Forest Centre, Slovakia

Transfer of knowledge for EU candidate country

Project Improvement of forest management in Serbia as a contribution to climate change adaptation and mitigation (SR 16 IPA EN 02 20) was focused on the implementation of European best practices. The effective transfer of skills and knowledge was one of the main goals of the Austrian - Slovakian consortium. Current sector policy, improvement of the payment system and alignment of the timber trade system legislation with the EU were the topics of the transfer of knowledge. The methodological approach was based on joint and mutual learning of all project experts. The transfer of knowledge required not only well presenting and lecturing about EU best practices, but also listening to the opinions and jointly developing locally adapted solutions to identified challenges. Three approaches have been used: Capacity building (I) focused on a Training of Trainers especially in respect to multiplying the gained knowledge and experiences. Besides classroom-style training, practical on-the-job or in-service training in the field have also been conducted. Study visit (II): were used to demonstrate experience from an older Member State and a newer Member State in forest management. Internships (III) offered the opportunity to gain insights into forest policy formulation and institutional development of the forestry institutions. Project strengthened the capacities of the forestry sector in Serbia. Promoting effective knowledge transfer is crucial and needs to be improved through regular information exchange and open and transparent discussions.

Co-authors: Zuzana Sarvašová, National Forest Centre, Slovakia; Alois Schuschnigg, Austrian Research Centre for Forests; Saša Stamatović and Ljiljana Sovilj, Ministry of Agriculture, Serbia

Role of Extension

Butler, Paul, Teagasc

The Promotion of Farm Forestry in Ireland

Historical factors left Ireland with a forest cover of about 1% at the foundation of the state in 1922. The government incentives put in place meant that this figure has increased significantly and forest cover now stands at 11.6% of the land area. The initial planting was mostly done by the state on public lands. Over the years the situation evolved, and as more attractive grants became available, there has been a greater focus on private, farmer, forestry. This changed the perception of forestry and a need developed for education and research around the use and silviculture of these new forests. Now a further change is happening in response to climate change and environmental challenges. Non timber services of forests such as biodiversity enhancement, carbon storage, soil erosion mitigation, livestock welfare and human wellbeing are being treated on a par with the commercial timber value. Teagasc supports the sustainable expansion of Ireland's forest resource. The current aim of further increasing forest cover requires innovative ways of promoting forestry as a complementary and sustainable enterprise on the farm. It needs to provide insights into how forests can complement existing farm enterprises and raise awareness of the multifunctional roles that forests can provide. Teagasc in its research and extension programmes is responding to these changes and reaches out to farmers, landowners, and other interested parties. Teagasc forestry promotional initiatives and their impacts will be described further in this presentation.

Co-author: Tom Houlihan, Teagasc

Christiansen, Alicia, Oregon State University Extension Service

Lessons Learned from Post-wildfire Outreach to Family Forestland Owners in Oregon

In September 2020, a wave of unprecedented wildfires burned across Western Oregon, impacting over 900,000 acres of public and private land. Many private family forestland owners faced countless challenges when it came to facilitating the recovery of their woodlands. These small woodland owners often lacked a basic understanding of forest management and leaned on community partnerships to help them through each of the steps associated with salvage harvest, restoration, and reforestation. This presentation focuses on experiences following one fire in Southwest Oregon, the Archie Creek Fire. We will look at how a local forest recovery partnership was formed, what this partnership accomplished in the years following the fire, and how social challenges affected on the ground efforts for restoration and reforestation. We will also discuss the role of the local Oregon State University Extension Service in responding to this natural disaster, which challenged operations, outreach, and service to local communities during a time of intense community need. Extension's response included a mix of traditional and innovative adaptations to effectively target outreach to family forestland owners affected by this fire, relationship building and maintenance, and development and implementation of educational opportunities for affected landowners. The lessons learned from this extreme wildfire event in Oregon can be applied worldwide and are relevant for anyone working with landowners affected by natural disasters of any kind.

Ingram, Kim, University of California Agriculture & Natural Resources, Cooperative Extension

Empowering Forest Landowners Through Stewardship and Education

2.8 million hectares of California's 12 million forested hectares are owned by small, non-industrial private landowners. These 75,000+ landowners have ecological conservation, restoration, and resilience goals which are driven by wildfire, climate change, drought, and tree mortality concerns. Some have been impacted by fires which burned over 2.8 million hectares across the state between 2020 and 2022. An estimated 36 million trees died in California in 2022 alone with drought, pest and disease causing a

substantial decline in tree health. Private landowners are important managers of forests. Efforts to support their education and success are critical in reducing the negative impacts of fire, drought, and pests.

Landowners work hard to manage their forests by undertaking fuel management activities such as thinning, piling, and burning of largely non-commercial material. The majority are doing and paying for the work themselves. Innovative outreach programs are needed to guide them towards best management practices, financial opportunities and community resources. Managing forests in California is an expensive, regulatory-driven process where funding assistance cannot keep up with demand. Additionally, experienced natural resource professionals, Registered Professional Foresters and Licensed Timber Operators are not distributed equally, or in sufficient numbers, across the state to help. This talk will cover the role of cooperative extension in assisting landowners and other natural resource agencies or non-governmental organizations who work in this area.

Co-author: Susie Kocher, University of California Agriculture & Natural Resources, Cooperative Extension

Kocher, Suzie, University of California Cooperative Extension

Helping Private Forest Landowners Recover From Wildfire

The amount of private forest land burned at high severity in recent wildfires in California has increased exponentially. High severity fire in California forests leaves behind standing dead trees and bare soil, leading to risks from snags, erosion and fuel loads. These must be addressed for successful reforestation. Because these fires are happening at large scales, the quantity of contractors, seedlings and other inputs for successful reforestation is inadequate and the value of burned logs is depressed because of volume.

In addition, current forestry assistance programs from the USDA Natural Resources Conservation Service and CALFIRE are not adequately funded to meet the need, and the processes developed are do not lead to a rapid response, meaning assistance programs are delayed which ends up costing more because of the need to deal with competing vegetation.

In response, the state of California has developed Emergency Forest Restoration Teams (EFRTs) to more quickly get resources to landowners affected by large scale wildfires. The University of California Cooperative Extension has developed an innovative program (funded by the US Forest Service) to conduct post-fire forest resilience workshops on zoom and with field days, conduct a private lands reforestation needs assessment, and conduct applied research on the effectiveness of EFRTs.

This talk will cover the broad strategy of post-fire forest restoration in California as well as the role of cooperative extension in assisting forest landowners affected by wildfire.

Oten, Kelly, North Carolina State University

Generation xtension: Training the Next Generation of Extension Professionals

Extension is a cornerstone of land-grant Universities in the US. Its mission is to provide readily available, research-based programs and educational resources to improve the lives of the people in communities across the state. It's an essential service that stakeholders rely on and as such, Extension professionals need skills and experience to communicate effectively. Despite this need for well-trained Extension professionals, there is relatively little available that offers direct education or experience in the realm of Extension to students. All too often, graduates are unfamiliar with what Extension is, let alone what it does or how to do it. In this presentation, the author will discuss ways to incorporate Extension into a student's experience. By exposing students to Extension, not only will we produce qualified individuals for future Extension positions, but we help to develop better-rounded professionals regardless of their career path.

