



LEARNING FROM OUR PAST, DESIGNING OUR FUTURE:

New Directions in Regional & National Forestry & Wood Products Extension

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Introduction

In November of 2015, the Forestry & Wood Products Extension Conference, the first in 20 years, was held at the **Louisiana Universities Marine Consortium (LUMCON)** DeFelice Marine Center in Cocodrie, Louisiana to coincide with the Society of American Foresters national meeting later that week in Baton Rouge, Louisiana. In the years since the last national Extension forestry conference much has changed in forestry for both forestry clientele groups (i.e. landowners) and the Extension personnel charged with education and outreach to those clienteles. Forest investments, and the subsequent collapse in the housing market have jeopardized financial returns for many involved with landownership and forest product production. There have been major changes within the institutional ownership of forestlands in the South and Pacific Northwest, with a stronger focus on profitability, highest and best use practices, and intensive management. Concurrently, there has been a decline in the presence of traditional forest products industry, and supply chains (i.e. mill closures in pulp and paper industries, sawmills, and logging workforce) and a dramatic increase in forest fragmentation. As a consequence, clientele education needs have diversified and become more complex as the forest products sector has undergone these dramatic changes.

As the primary provider of landowner education in the United States (Jones et al 2001, Baumgartner et al 2003, Sagor et al 2014), forestry Extension plays an important role in forestland management throughout the country. However, Extension programming has seen reductions in base funding from state and federal sources (Brown, 1999). Consequently, there has been a decline in one-on-one and extended contacts between Extension agents and specialists and their target audiences (Sagor et al. 2014). This contact has, in some instances, been replaced with digital media interactions, which may be driven by declining resources. Budget reductions and challenges associated with securing reliable or long-term future funding for programming has been widely documented (Sagor et al 2014, Serenari et al 2013, Schroeder et al 2011). While Extension groups across the country have faced large cuts in operating budgets and as personnel have retired, there has been a lack of commitment to bolster those ranks from University administration due to financial realities in the broader economy and perhaps an increased lack of stakeholder engagement as a consequence of changes in forestland ownership and succession. This puts a strain on the personnel who do hold Extension appointments to be more knowledgeable, more accessible, more effective and to offer more programming to traditional audiences and to anticipate those emerging audiences. While technology



has allowed fewer individuals to cover more ground, there are limitations. These advances have provided an opportunity to make programming more accessible to a larger audience. However, Extension personnel may not be prepared to cater to these methods or have the additional skills, abilities or time that might be required. As well, most landowners are over 65 and have not been as quick to adopt the technology that Extension personnel may use, and prefer more traditional methods (Measells et al. 2006).

A national level conference, focused on U.S. forestry Extension critical issue areas, possible collaborations, and successful strategies for program development and delivery, was proposed and funded by Renewable Resources Extension Act focus funds (USDA NIFA Award Number 2015-46401-24168). The objectives were to give the participants an opportunity to compare and contrast development and

'The addition of digital media interactions could also be attributed to the new expectations of the current clientele of Extension programs who prefer to access programming in an asynchronous or online format.'



Louisiana Universities Marine Consortium (LUMCON) DeFelice Marine Center. Credit: Julia Luthringer

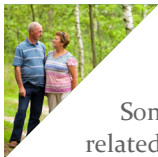
delivery strategies and to discuss opportunities with their peers for possible collaborations to overcome the challenges mentioned above similar to prior meetings which focus on successful strategies and priority areas for future collaborative efforts (Johnson et al 2006). Nearly 80 Extension forestry academicians and personnel from 27 states gathered to discuss The Future of Extension Forestry & Wood Products Programs in the United States.

The conference featured a series of notable plenary speakers who covered current and emerging issues related to the future of Extension (Dr. Scott Reed, Oregon State University) private forest land management (Dr. Jim Finley, Pennsylvania State University), urban forestry today and tomorrow (Mr. Dudley Hartel, U.S. Forest Service), the forest products forecast (Dr. Scott Leavengood, Oregon State University), and critical issues on public lands (Ms. Kim Rodrigues, University

of California-Berkeley). Each of these speakers set the stage for breakout groups to further discuss these critical issues areas; The Future of Private Forest Management, Urban Forestry Today and Tomorrow, The Forest Products Forecast, and Critical Issues on Public Lands. First by discussing them in the context of regional opportunities and challenges (Northeast, North Central, Southern, and Western) and how to address those through possible collaborations to develop and deliver forestry programming in four breakout group discussions (Communicating Extension's Value and Relevance to Stakeholders, Increasing Capacity Within Extension, Increasing Workforce and Support). We outline the results of those critical areas, regional discussions, and breakout sessions below and follow with a 'vote' on prioritization of Extension development strategies to address those needs that became apparent in the preceding critical area, regional and breakout discussions.

²To view the presentation files, please visit: <http://blogs.oregonstate.edu/ntlexandwoodprodsconf/>

Critical Issue Areas



A. FUTURE OF PRIVATE FOREST LAND MANAGEMENT

Some of the current and emerging challenges related to private forests include dealing with successional planning, reaching unengaged forest owners and keeping current with information and advice on issues such as invasive species, changing technologies, climate change, and state and federal support programs. Another challenge involves how best to set up volunteer programs and peer-to-peer learning networks which are evidenced to be successful in forest management and conservation delivery (Ma et al 2012). Functional partnerships with non-profit organizations could be beneficial for Extension groups throughout the country. Extension foresters also expressed a concern about developing new ways to reach the younger generation of landowners (or soon to be landowners). They access information in much different ways than their parents or grandparents.



B. THE FOREST PRODUCTS FORECAST

The forest products industry in the U.S. is ever evolving. The development of new engineered wood products is a perfect example. Composite wood products such as laminated veneer lumber and glulam beams have been around for decades, but now we are seeing the emergence of cross-laminated timber, which has the potential to greatly change construction practices on mid-rise buildings. In addition, forest-based biomass and biofuels sectors have experienced growth in recent years, largely fueled by renewable energy standards here and abroad. The southern U.S. has seen the development of the wood pellet industry, with most production exported to Europe. Some of the biofuel development has also led to value-added products of wood-based bio-chemicals, which have higher values than the fuel that is produced. Wood Products Extension Specialists need to keep at the forefront of these developments in the industry, but face challenges as their ranks have thinned in the last several decades. Since many states have only one or even no Wood Products Extension Specialists, and state forestry agencies have reduced their investment in wood products and utilization, there is a need to operate smarter through networks and regional programming. Wood Products Specialists have also adopted a stronger online presence, with web-based directories and information, as well as webinars and hybrid programs which involve both face-to-face and online learning.



C. URBAN FORESTRY TODAY AND TOMORROW

Research shows the environmental and economic values of urban forests and greenspaces. Trees in urban areas provide cleaner air than nonforested areas and are valuable to watersheds; filtering water by slowing flow and absorbing excess nutrients and pollutants. They reduce sound, and cool buildings and open spaces in the summer. Research is also drawing a connection between human health and well-being and urban trees. Similar to the personnel issues facing wood products, Extension specialists in urban forestry are few and far between, mitigated in part by state forestry agencies and urban forest councils. Key issues include tree maintenance, developing tree ordinances that are rational and help to preserve existing tree infrastructure, green infrastructure that works with trees, recognizing and working across the landscape continuum from the rural areas to the wildland urban interface, to the urban environment. Engaging youth in urban forestry programs is a great way to promote the planting and maintenance of urban trees.

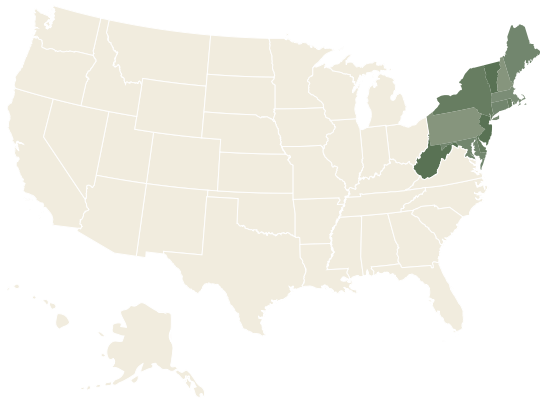


D. CRITICAL ISSUES ON PUBLIC LANDS

Public forest lands, though much more prevalent in the West, affect the private lands they adjoin and indeed the entire forest sector in many ways. Federal forests, in particular, contribute to the vast array of environmental benefits Americans derive from forests, such as clean water and air, wildlife habitat, water flows, recreation, and more. But for those who own lands adjacent to national forest or Bureau of Land Management lands, the relationship is much more complex. Insects, disease, invasive plants, wildlife, and certainly wildfire do not pay much attention to property lines, creating stakeholder conflict at the public/private interface. In recent years the advent of collaborative groups has helped to reduce the bureaucratic backlog and reduce appeals and litigation of federal land management projects. In fact, in some states these Collaborative Groups have become a new audience for Extension foresters, since they are often populated with citizens who have a keen interest in the forests, but not a lot of knowledge of traditional forest management. Forestry Extension can play a key role in helping to educate the collaborative group members about forest ecology, silvicultural techniques, wildlife habitats, and more. In many cases, Extension foresters have been pulled in to help with facilitation of collaborative group meetings, though this is not a usual function for Extension Foresters. Typically, Extension foresters enjoy a great deal of community trust and are seen as a neutral party to the diverse backgrounds of members of the collaborative groups.

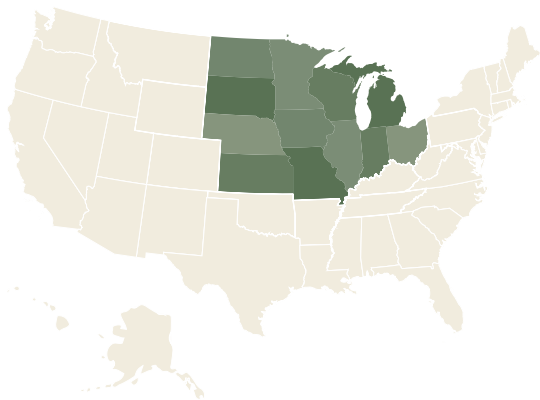
Summaries of the Regional Breakout Group Discussions

The conference attendees had an opportunity to break out into geographic regions. These groups varied in attendance from 15 to 30 in size. They were moderated, and note takers captured the conversation around barriers, issues and opportunities. The following is a short summary by region.



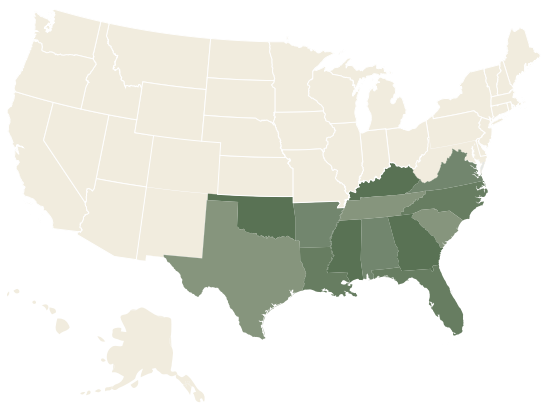
A. KEY ISSUES AND OPPORTUNITIES FROM THE **NORTHEAST REGION**

Extension foresters from the Northeast Region had a wide ranging discussion that covered issues relating to partnerships, lack of capacity and how to overcome it, new approaches to programming, and use of technology. With the reduced support for Forestry Extension in the region, it is essential to work more effectively and, often in partnership with other agencies and organizations. Often Extension Foresters vie for competitive or other grant and contract funds. These can bolster capacity and impact of the state's program but can also constrain new or existing personnel to servicing the grant, and on a limited duration "project" that may or may not be a high level priority for the state, region or country. This also limits the ability to focus on an overarching "program." In the Northeast particularly, it is important to get the support of urban populations, because they provide the majority of tax dollars that fund forestry Extension. They must see the value in it if they are willing to support it with their tax dollars. So, exploring and engaging in opportunities with this audience like citizen science programs, youth programs, and land use issues may help. In the Northeast people are often interested in what their neighbors are doing, so peer-to-peer networks may be a good way to increase capacity or outreach to forest owners.



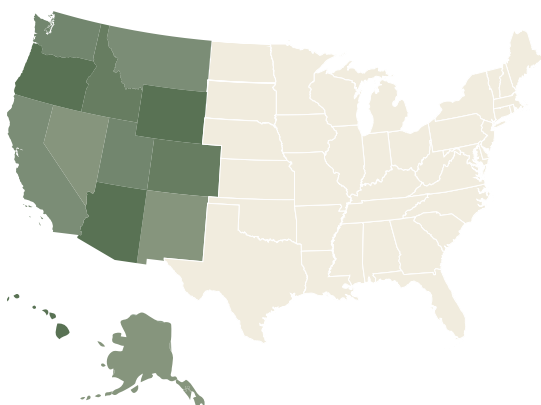
B. KEY ISSUES AND OPPORTUNITIES FROM THE **NORTH CENTRAL REGION**

Identifying opportunities and mechanisms for regional collaboration were highlighted during the North Central regional breakout session. The North Central Region, which extends from Ohio and Missouri up through the Lake States, has a great deal of diversity; culturally, economically, and ecologically. As a result, the educational needs, modes of delivery, and Extension capacity also vary across the region. Several common themes emerged as being important across the region, including forest health and invasive pests such as the Emerald Ash Borer (EAB), water quality, silviculture, and forest products. The need to reach a wider audience was also felt across the region. Extension Foresters in the North Central Region committed themselves to developing a complete directory of the Extension Forestry personnel in the North Central area of the country and then develop periodic regional audio or video conferences to exchange information and seek collaboration, then follow-up with a regional conference for 2017.



C. KEY ISSUES AND OPPORTUNITIES FROM THE SOUTHERN REGION

The Southern Region is large and diverse, encompassing 13 states. One key issue to move forestry and natural resources Extension forward in the region includes stronger engagement with political leaders, both at the state and federal levels. Politicians who are also landowners should be sought out and relationships should be developed. County level agents may be in the best position to make and nourish these relationships. Additionally, Extension faculty need to get better at marketing what they do, not only externally, but internally as well. Extension faculty need to better showcase efforts and achievements within universities, and create bridges for engagement with the broader university. Building the capacity of Extension is a real need in the region. Other things that need improvement in the South include getting better at utilizing social media, mentoring younger Extension professionals, developing tools and techniques for Extension work, and reaching out to new Extension faculty so that they feel included and not excluded and isolated. Utilizing flexible working schedules can help to prevent burnout of newer faculty. Extension also needs to reach out to non-traditional partners and seek new strategies that reflect how people want to receive information today.



B. KEY ISSUES AND OPPORTUNITIES FROM THE WESTERN REGION

Regional integration is a major issue in the Western Region, which is made up of 13 states (including Alaska and Hawaii). There are many resources in the region to assist with integration efforts, including the Western Coordinating Committee for forestry and natural resources Extension, U.S. Forest Service State and Private Forestry, two U.S. Forest Service Research Stations, the Western Governors Association, the Western Forestry Coalition, and agricultural experiment station networks. There are many previously identified issues for regional collaboration; public land collaboratives, urban forestry and wildland-urban interface concerns, environmental literacy, drought, water, and snowpack issues, forest health, alternative forest products, climate change, forestry workforce development, biomass and bioenergy.

In order to enhance opportunities for regional collaboration it will be necessary to streamline current workloads to create some flexibility in schedules to take on new, regional projects. Efforts should be improved to identify data sets regarding needs of clientele, and also improved methods for sharing expertise across state borders. For example, Oregon now has a forest tax specialist, and taxes represent an important educational need across the region. Sharing this specialist with a state that is lacking this expertise could alleviate shortages of personnel expertise if salary offsets can be agreed upon. Alternatively, Penn State and Ohio State have partnered to produce a tax seminar in online format that forestry clientele can access year-round for a nominal fee. The Pacific Northwest has a tristate regional publishing mechanism that could be used in surrounding states. Improvements could be made regarding sharing publications across state lines like the effort in the Southern region with the regional peer reviewed publication process (see sref.info/publications for an example), and developing a regional Extension resources website (i.e. Southern Regional Extension Forestry- www.sref.info). Short-term strategies include growing and supporting the Western Coordinating Committee for FNR Extension held in Albany, CA in December 2015.

Summaries of the Critical Issues Breakout Group Discussions

Attendees were invited to select two of three offered critical issue breakout group discussions (repeated twice) to join ad hoc discussions of how best to address issues identified in the critical issue areas and regional discussions³. Notes were taken in each of the rounds for each facilitated breakout session and a summary of those discussions follows.

A. TELLING OUR STORY: COMMUNICATING EXTENSION'S VALUE AND RELEVANCE TO STAKEHOLDERS

Over the course of two breakout sessions, 13 themes emerged from the free-ranging discussion, which focused on these three questions:

1. **With whom do we want to communicate and engage with?**
2. **What do we want to communicate?**
3. **How shall we tell our story?**

These themes (in bold) and the subsequent discussions are summarized below:

The group listed traditional audiences to target such as volunteers, county agents, forest owners, professional foresters and loggers, wildlife enthusiasts, urban residents and youth. The group then discussed how to best engage these different audiences: To **'Engage Extension volunteers'**, the group recommended providing volunteer networks such as Master Gardeners and Master Naturalists with advanced training opportunities to help them tell our story to their audiences. As with engaging the general public, make it place and time relevant; for example, if there is an Emerald Ash Borer discovery in a new location bring this to their attention with interesting presentations. To **'Engage partner organizations'**, the recommendation was to actively participate in federal and state natural resource agencies (e.g. NRCS, FSA, state conservation/forestry/natural resource departments) and bring one's resources and capacity to the table to help solve problems. To **'Engage forestry graduate students'**, the group said there was a need to inform and engage them in what Extension forestry is all about. Use this dialogue as a way to attract and engage their major professors (many of whom know relatively little about Extension). To **'Engage internal county Extension agents'**, interact with Extension specialists in other disciplines (e.g. livestock, agronomy, horticulture, 4-H, community development), look for ways one can interject forest stewardship principles and practices into their programming, as well as how they can help spread the word about forestry Extension events and activities. To **'Engage the forest products industry'**, provide them with forest resource information.

More general audiences to target that could also help spread our message to target were identified as listed. To **'Engage local food groups'**, introduce locavores (as they are called) to the idea of locally or regionally available wood (including urban wood) and forest farming products. To **'Engage youth'**, partner with FFA, 4-H, Envirothon teams, and teachers engaged in Project Learning Tree to help them with forestry-related service learning opportunities. To **'Engage the general public, especially the urban sector'**, articulate the value of forestry via mass (including social) media that is place and time relevant. To **'Engage media'**, invite them to Extension events. Feed media outlets (newspaper, radio, TV, social media networks) stories about the value of our forests and woodlands and how Extension is the vehicle for transferring scientific information from the universities to the general public.

Another important audience to target more strategically were identified as Decision-makers. To **'Engage county-elected officials'**, offer periodic and annual reviews of Extension forestry programming in their region to show them the value they are receiving from their investment in Extension. Get them to help spread the word to attract non-traditional individuals to forest-related Extension programs (new landowners, underserved segments of society). To **'Engage congressional delegations (at both the federal and state level)'**, invite the elected legislators, with specific focus on their field staff. Invite them to Extension

³Originally, four issue areas were identified (Communicating Extension's Value and Relevance to Stakeholders, Increasing Capacity Within Extension, Increasing Workforce and Support, and Emerging Issues). However, due to limitations and redundancies with other sessions the 'Emerging Issues' strategy session were dropped.

events and engage them in the same way as we would a media group. Show them the value of managed forests and a healthy forest products industry. Provide attendees with simple, one-page fact sheets to take back to the office. To **'Engage community development and regional planning groups'**, help them understand the value-added nature of the forest industry in their community/region and the ecosystem services provided by *managed* forest and woodlands. To **'Engage people trained in communication'**, get their help to package our messages in more meaningful ways.

B. INCREASING CAPACITY WITHIN EXTENSION: MAXIMIZE WHAT WE ALREADY HAVE AND EXPAND OUR IMPACTS

Over the course of two breakout sessions, 16 themes emerged from the free-ranging discussion, which focused on these three questions:

1. **How to build upon pre-existing capacity**
2. **What audiences can we reach that currently we do not focus on?**
3. **How can we best quantify our impact?**

These themes (in bold) and the subsequent discussions are summarized below:

Many of the key elements of expanding our capacity include the following traditional and pre-existing areas for working collaboratively with non-internal personnel and organizations. One interesting idea was to **'Expand our grant writing capacity'** through training for internal personnel and working closer with funding agencies and partners that are external to our departments and in house Extension partners. **'Leverage our partnerships'** focused on working more closely with our existing partners and working to expand our breadth of partners. Typical partners include the U.S. Forest Service, state forestry agencies and associations, The Nature Conservancy, forestry companies, and the Sustainable Forestry Initiative. We don't often partner with foundations, however, and they may take interest in and fund our work. There exists opportunity to work more closely with state agencies who may not have the capacity and/or ability to apply for grants or deliver grant requirements in the areas of education, outreach and Extension. The Land Grant Extension community, can bring this expertise. Another area is that Extension forestry/wood products should **'Think internationally'**, as there are opportunities to seek grants from organizations like U.S. Agency for International Development. This has an added benefit of not only assisting many developing and developed nations around the world, but expanding the knowledge and experience base of our workforce. Another theme, **'Work more closely across state lines'** focused on the importance of identifying willing colleagues in nearby states or in the region who share the same issues and needs with the goal of developing meaningful relationships for collaboration. In the Southern region, the 13 state Southern Regional Extension Forestry partnership has resulted in many new productive relationships, products, technologies and programs (see www.sref.info). A recommendation was to develop specialist teams to tackle common problems. An immediate need is to keep the national wood products and forestry Extension directory up to date so that colleagues can be searched based on expertise or programming areas. Finally, in this area, it was suggested that more frequent meetings to get people together face-to-face, or even virtually would be highly beneficial.

In the area of **'Improving our ability to share'**, and working collaboratively to develop clearinghouses for our educational materials it was suggested to use our overall Extension system more effectively. There is the national Association of Natural Resources Extension Professionals (ANREP), as well as regional organizations such as the Extension Director organizations that can be used for this purpose. Another recommendation was to **'Engage more fully with eXtension'**, the eXtension program is still operating, and there are a number of communities of practice relevant to forestry (such as woody to energy, urban forestry, forest farming, and climate, forests and woodlands). eXtension can aid this group with more aggressive use of innovation and technology. To **'Make stronger use of technology'**, utilize the many platforms in use for webinars, and they are now in common use. There is currently the need for a repository for these webinars so they can be re-used. A current site, www.forestrywebinars.net could be expanded beyond the Southern region to go national. Webinars extend reach and impact. Along those same lines, another theme **'Modernizing our educational programs and delivery systems'**, the recommendation is to investigate the ability to 'modularize' current online educational programs so they can be consumed in smaller bites. A related concept, using a "flipped classroom" approach, where the information and Powerpoint® presentations are provided to educational program participants first to digest and learn, and then spend time (either face-to-face or virtually) on discussion, reflection, and 'doing'. Another area, **'Building peer to peer networks'**, is effective because people often like to learn from their peers (Jones, et. al., 2001), so building a network of trained peers can extend Extension's reach and effectiveness. This can also be implemented across state lines and outside traditional networks and the university, which the conference itself served as a great starting point. Within the university **'Build stronger**

connections with the rest of the university' was also recommended. In order to get stronger support from the university, value has to be demonstrated. Stronger relationships across the campus, including with both teaching and research faculty must occur for this to happen. Showing that Extension can bring value to university colleagues outside of forestry and agriculture, and seeking ways to engage students in Extension work will reap rewards in many ways.

Internal and external funding was also brought up as a key issue area. Internally, the need to **'Provide stronger support for Extension employees'**, points out the need to improve at providing support to Extension educators, including those on grant funds. This includes not only salary, but operational support as well. **'Working aggressively to grow endowments for Extension'**, means that while endowments can be set up to support Extension as well the other traditional research, teaching and service gifts. Forest owners giving gifts of land to the university is a good way to get endowment funds for example. A recommendation is to work with university development officers and donors to encourage Extension components of these gifts that come from especially forestland. Externally funding for Extension has been difficult to come by so this offers a way to gain access to existing sources in another 'win-win' situation. Perhaps an area that receives attention on occasion is the need to **'Boost the federal Renewable Resources Extension Act (RREA) funding to its authorized level'**. As the key base federal funding source of Extension in the renewable resources area, this funding has been a critical leveraging source for state level Extension programs. One suggestion, was to consider a promotional effort that could lead to funding support tied to \$1 per forest owner in the U.S. With approximately 10 million private forest owners, that would yield \$10 million per year. This is still short of the authorized RREA level, but more than double the current allocation. This effort needs to be taken up by Extension renewable resource leadership in the country. An outcome of this could lead to **'Creation of seed grant opportunities'** from this additional RREA funds. If 10% of the additional \$6 million in RREA funds could be made available for this granting opportunity, a total of \$600,000 could be made available for a number of smaller, competitively funded efforts. In Extension especially, big outcomes come from small beginnings. Seeking to create seed grant opportunities for Extension faculty to conduct pilot projects and then collate to larger solutions would be an effective use of these funds. Partnering with others who can also bring small amounts of funding to a group project could add additional benefit.

One of the final themes involved Utilizing natural advocates and **'Developing a volunteer pool'**, Volunteers can assist in program delivery, but also serve as great advocates. Many states have programs that train and utilize volunteers, like Master Gardeners, Master Tree Farmers, Master Naturalists, etc.

Incentivizing funding opportunities may be aided by **'Showcasing our impacts'** as there is a need to improve our ability to communicate our successes. We need to demonstrate the value we have and how the help and assistance we give to people helps improve their lives and their communities.

C. INCREASING WORKFORCE AND SUPPORT: TRAINING AND EDUCATING UP- AND-COMING EXTENSION PERSONNEL

This breakout session focused on three key issues:

1. **'Feeding the pipeline' for new Extension personnel**
2. **Increasing the visibility of Extension and rebranding efforts to increase potential recruitments**
3. **Supporting and retaining new Extension personnel**

The following strategies (in bold) were proposed and discussed within each issue:

'Feeding the pipeline for new Extension personnel'. Identify student Extension opportunities and include both undergraduate and graduate students. Identify and provide internship opportunities for students. Research or innovative programs conducted during those internships should be presented by students to Extension events and appropriate conferences. This encourages building a connection to the Extension community. Identifying those students that would be attracted to Extension was also discussed. Strategies included connecting with nearby community colleges and with the county offices, this improves recruitment and diversity for local positions. Being more aggressive in connecting with 4-H and high school programs and even developing a forestry leadership camp for increased forestry/wood products exposure was suggested. Developing training in Extension forestry/wood products methods through an Extension and outreach academy, and focus on experiential learning. Lastly, develop more informal network opportunities with students and develop international experiences to show the role of Extension and help students understand needs and how to meet them.

In the area of **‘Increasing the visibility of Extension’**, it was suggested that Extension personnel could do seminars or workshops on campus to engage other faculty (inter and intra departmental). It was also recommended that Extension faculty could articulate what Extension is during any campus talks and at all community talks (it’s everyone’s responsibility). Having a class for undergraduate juniors and seniors in Extension where the students attend lab sessions that include field days, workshops and face-to-face meetings with landowners (like at Cornell University) would also lead to more interest in the field. Viewing undergraduates as Extension clients, providing a certificate program like the tree farm certificate in Oregon, and Having Extension faculty teach classes and bring in landowners to give students the real life experiences they desire were all suggested.

Agent hiring efforts could focus on broadening position descriptions with an interdisciplinary focus, not just an agricultural background for example, but perhaps a journalism or communications degree in addition to an agricultural or environmental background).

Under the theme of **‘Supporting and retaining new Extension personnel’**, Mentoring those without a forestry disciplinary background such as agents who have mostly agricultural background and appointment but landowners have forests could lead to enhanced local programming in forestry and wood products. Fostering relationships between agents and state-wide specialists by having specialists build impact statements for programs that the agent has participated in by organizing local events is both inclusive and serves the purpose of showing impact, and collaboration. A more general suggestion was to set a good example and support the work-life balance, as well as an example of someone who avoids supporting a culture that encourages ‘competitive martyrdom’. To that end, teach new personnel how to focus on strategizing work priorities for the biggest impact (and efficiency). Allow them first begin. They also need time to learn about university resources and how to establish credibility. Further and at the administrative level, reassess the expectations put on Extension personnel so they are more realistic. This is important so as not to lose new professionals due to responsibilities that include larger areas, burdensome administrative duties, extensive publishing for specialists, etc. In short, ensure new positions have reasonable expectations.

From a technical standpoint, develop peer learning throughout the system as ‘we’re all newbies’ for methods. Identify these through a needs assessment. Collect any training materials currently used to share nationally, develop a new Extension forestry boot camp that could be held every other year (through an RREA grant proposal), and develop on-line components and webinars for off years.

Another suggestion was to develop a new ‘Extension forester handbook/ tool kit’. Include content on how to keep a work/life balance so as not to ‘burn out’. Find ways to hold regional and national Extension gatherings more often for mentoring and relationship building so we can collaborate better. Network with the International Union of Forestry Research Organizations (IUFRO) Extension working group and participate in ANREP professional development efforts (anrep.org).

Prioritization of Extension Development Strategies for the Immediate and Longer term

*Following the breakout session discussions, the entire conference delegation re-convened to vet the top 16 strategies that emerged from the sessions. Each participant was given four dots to place on their top four strategies, and in this way a prioritized list was developed. **Table 1** details the priorities that were gleaned from this prioritization. The table includes all 16 priorities. Note that the first six strategies had the highest number of votes. It was the consensus of the entire congregation that those priorities received enough votes and were important enough to move forward on for a commitment from several who became de facto ‘project leads’. The remaining priorities were deemed important but they did not receive enough votes to move forward at this time.*

TABLE 1. THE RESULTS OF THE PRIORITIZATION PROCESS AND THOSE WHO WILL MOVE THE PRIORITY FORWARD.

#	Priority	# Votes	Focus Areas
1	Efficient delivery systems	67	<ul style="list-style-type: none"> - Multiple methods for same material - Use of technology - Flipped models and modularization - Nationwide delivery (when appropriate)
2	Craft more meaningful messages	54	<ul style="list-style-type: none"> - Work with communication professionals - Craft messages that showcase Extension's value
3	Be more strategic at the "front end"	46	<ul style="list-style-type: none"> - Gather and use data on audiences and impacts
4	Extension Toolkit and Bootcamp (two separate topics; total of 67 votes)	67: 40 and 27	<ul style="list-style-type: none"> - Create a handbook and toolkit for Extension Foresters - Hold a "bootcamp" every other year for new Extension personnel
5	Increasing workforce and support	39	<ul style="list-style-type: none"> - Provide opportunities for students in Extension
6	Internal networking between state staff	35	<ul style="list-style-type: none"> - Extension Forestry and Wood Products Directory - Sub-Regions (SREF, Western Coordinating Committee, etc.) - Repository of materials, fact sheets, etc - Leveraging Curriculum of Practice in Extension
7	Increasing capacity for educational opportunities	32	<ul style="list-style-type: none"> - Industry - Non-profit - USFS - Others
8	Telling Our Story: Provide information to elected officials and Extension Councils	30	<ul style="list-style-type: none"> - Show the value of forestry and the resource base
9	Strengthen visibility and relationships with University, Colleges, Departments	28	<ul style="list-style-type: none"> - Clear, regular messages - Student involvement
10	Take advantage of volunteers	22	<ul style="list-style-type: none"> - Programmatic assistance - State-level coordinator is critical - Advocacy - Peer networks
11	Telling Our Story: Engage Media	19	<ul style="list-style-type: none"> - Invite media to events - Feed them stories about Extension and public value of forestry
12	Relevant media messages	17	<ul style="list-style-type: none"> - Important for the general public and urban groups (mass/social media)
13	Telling Our Story: State and federal congressional delegations	14	<ul style="list-style-type: none"> - Invite to events - Provide them with tours and fact sheets
14	Partner organizations	13	<ul style="list-style-type: none"> - Show up! - Bring resources and capacity
15	Develop forestry in-service for new and non-forester colleagues	9	
16	Re-branding	8	<ul style="list-style-type: none"> - Give talks - Teach classes - Outreach to faculty - Bring clientele to campus

Implications and Discussion

Following the LUMCON Conference, the project investigators prepared an initial report and compiled all of the raw data collected on flip charts and by in-session recordings for submission to USDA NIFA as a final project report. A summary presentation was presented at the 2016 national ANREP Conference held in Burlington, VT. Additionally, the NIFA National Program Leader, Eric Norland, submitted a proposal for a follow-up workshop at the ANREP Conference. Dr. Norland will also work with the self-selected projects leads designated in Table 1a to move forward on the six top priority agenda items identified by conference participants. Closer examination of these priority areas reveals major themes and emerging strategies for continuing the natural resources extension mission into the 21st century. On the one hand, there is a strong push and need to become more efficient in delivering extension materials to forest stakeholders. With the reductions in staff at all institutions, cross-pollination and sharing of materials and successes and failures will increasingly become more necessary and commonplace. This need for professional development among Extension professionals and their peers has been well documented (Johnson et al 2007). Nonetheless, there are limitations to 'off-site' support. Two other areas that were identified which may help alleviate personnel shortages were to find ways to include and promote more student involvement (at both the

undergrad and graduate level), serving the dual purpose of aiding with short term staffing problems and in the longer term to familiarize students with extension as a possible career path upon graduation as most do not get much exposure during their time at university⁴. Lastly, two other areas identified which have some synergistical potential were to gather and use data on program participant audiences and to quantify the impacts at a programmatic level. Carefully constructing objectives and goals for State programs with stakeholder involvement and coordination with regional and National (USDA NIFA) extension partners. This would at a minimum entail quantifying the increases in awareness and knowledge, along with adoption of recommended practices, that would ultimately serve to better address the strategic goals of the RREA mission and provide more accurate data to the year to year RREA REEPORT progress reports and quantitative indicators. These quantifiable metrics also serve to make a case to stakeholders and policymakers of the value of our programs individually and in concert with other states to address the proper stewardship of our natural resources at a regional and national level. Coupling this focus on quantitative accounting with more directed and well-crafted messaging of Extension's impact and value could also help provide a rationale for higher prioritization of our work in the provision and allocation of natural resources in the future.



LUMCON conference group photo. Credit: Sean Tanger

⁴This could include more focus on formal undergraduate and graduate education in terms of coursework and focused Thesis and Dissertation research (see Bruce and Johnson 2004).

TABLE 2A. NATIONAL FORESTRY & WOOD PRODUCTS EXTENSION CONFERENCE EVALUATION RESULTS

CONTENT					
The Following Sessions Were Informative and Relevant to My Professional Life	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
Keynote Panel Discussions			3 (5%)	24 (41%)	32 (54%)
Breakout Groups Related To Keynote Panel Discussions			6 (10%)	26 (44%)	28 (47%)
The Future Of Forestry & Wood Products Extension Programs At The Regional And National Level			5 (8%)	17 (28%)	36 (61%)
Regional Discussions		2 (3%)	10 (17%)	14 (24%)	33 (56%)
Keynote Presenter Reaction To Discussion			10 (17%)	29 (49%)	21 (35%)
Breakout Strategizing Sessions	1 (1%)	2 (3%)	6 (10%)	24 (41%)	24 (41%)
Prioritizing Strategies And Reflection		1 (1%)	6 (10%)	21 (35%)	20 (34%)
This Event Was A Good Use Of My Time		1 (1%)	7 (12%)	11 (19%)	39 (66%)
I Look Forward To Working With My Regional Partners On Issues Identified At This Event		1 (1%)	5 (8%)	15 (25%)	37 (63%)
The Networking Opportunities At This Event Were Useful		1 (1%)	1 (1%)	12 (20%)	44 (75%)

TABLE 2B. DEMOGRAPHICS OF RESPONDENTS

AFFILIATION	TOTAL	
Based in a county office that serves one or more counties	5	8%
Based in a district or regional office	5	8%
Based on campus with statewide responsibilities	39	66%
Based in the field and have statewide responsibilities	10	17%
Years of Service in Cooperative Extension		
Less than 3 years	10	17%
More than 3, less than 7	7	12%
7 - 15 years	16	27%
16+ years	26	44%
Region		
North Central	7	12%
Northeastern	6	10%
Southern	32	54%
Western	15	25%
Area of Expertise ^a		
Agroforestry	17	NA
Forest Products (development, production, marketing)	13	NA
Forest resource management (silviculture, Economics, ecology, forest health/protection)	40	NA
Specialty Forest Products (Christmas trees, maple products)	3	NA
Urban Forestry	6	NA
Other (specify) ^b :	7	NA

^a Did not do percentages as respondents chose multiple answers in some cases.

^b Climate, GIS and Web Development, Marketing and Design, Forest Resources and Human Dimensions, Administration, Grazing, Oak Woodlands, Grasslands (one chose Other but did not specify an area)

LUMCON CONFERENCE ATTENDEES AND AFFILIATIONS

Lyle Almond	University of Maryland Extension	Michael Kuhns	Utah State University
Bobby Ammerman	University of Kentucky	Scott Leavengood	Oregon State University
David Apsley	Ohio State University Extension	Andy Londo	Ohio State University Extension
Keit Argow	National Woodland Owners Association	Kurt Mackes	Colorado State University
Susan Bambo	Federation of Southern Cooperatives	Steven McConnell	Washington State University - Extension
Charles Barden	Kansas State University	Eric McConnell	North Carolina State University
Robert Bardon	North Carolina State University	Dave McGill	West Virginia University
Jon Barry	University of Arkansas Cooperative Extension	Mark Megalos	North Carolina State University
Brianna Beene	Oregon State University	David Mercker	University of Tennessee
Karen Bennett	UNH Cooperative Extension	Phil Mitchell	North Carolina State University
Brian Chandler	LSU AgCenter	Susan Moore	North Carolina State University
Terry Conners	Department of Forestry	Frank Mrema	Alcorn State University
Laura Costa	Southern Regional Extension Forestry - UGA	Azali Muhammad	Alcorn State University
David Coyle	Southern Regional Extension Forestry - UGA	Chad Niman	University of Kentucky
Kyle Cunningham	UA Cooperative Extension Office	Eric Norland	USDA National Institute of Food and Agriculture
Tamara Cushing	Oregon State University	Pascal Nzokou	Michigan State University
Michael De Lasaux	University of California Cooperative Extension	Andy Perleberg	Washington State University
Chris Demers	UF/IFAS Schol of Forest Resources and Conservation	Georgia Peterson	Michigan State University Extension
Adam Downing	Virginia Cooperative Extension	Tim Reader	Colorado State Forest Service
Tiffany Fegel	Oregon State University	Scott Reed	Oregon State University
Jim Finley	Penn State University	Kim Rodrigues	Univ of California Agriculture and Natural Resources
Dan Geller	Southern Regional Extension Forestry - UGA	Matthew Russell	University of Minnesota
Jason Gordon	Mississippi State University	Eli Sagor	University of Minnesota
Lauren Grand	WSU Extension	Chris Schnepf	University of Idaho
Jennifer Grantham	North Carolina State University	Mary Sisock	UVM
Amy Grotta	Oregon State University	Peter Smallidge	Cornell University
Don Hanley	Washington State University	Sarah Smith	UNH Cooperative Extension
Dudley Hartel	USDA Forest Service	Dean Solomon	Michigan State University Extension
Keith Hawkins	LSU AgCenter	Hank Stelzer	University of Missouri
Dennis Hazel	North Carolina State University	Jeffrey Stringer	University of Kentucky
James Henderson	Mississippi State University	Nicole Strong	Oregon State University Extension
William Hubbard	CES - Southern Region	Shaun Tanger	LSU AgCenter
Kristina Hughes	Colorado State Forest Service	Eric Taylor	Texas A&M Forest Service
Joshua Idassi	North Carolina State University	Billy Thomas	UK Forestry Extension
James Jeuck	North Carolina State University	Tamara Walkingstick	UA, Div. of Ag, Arkansas Forest Resources Center
Jim Johnson	Oregon State University	Steven Weaver	Southern Regional Extension Forestry - UGA
Jonathan Kays	University of Maryland Extension	De'Etra Young	Tennessee State University
Ricky Kilpatrick	LSU AgCenter	Kevin Zobrist	Washington State University
Susie Kocher	University of California Cooperative Extension		

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Literature Cited

Baumgartner, D., J., Creighton, and K. Blatner. 2003. Use and Effectiveness of Washington state's Extension forest stewardship program. *Small-Scale For.* 2(1):49-61.

Brown, R. D. 1999. Natural resources challenges for land grant colleges of agriculture in the 21st century. *Renewable Resources Journal* 17 (1): 12-17.

Bruce, F. A., Jr., and J. E. Johnson. 2004. Graduate program in Forestry and Natural Resources Extension Education: An International Needs Assessment. *Journal of International Agricultural and Extension Education*. 11(1):35-44.

Johnson, J. E., J.H. Creighton, and E.R. Norland. 2006. Building a Foundation for Success in Natural Resources Extension Education: An International Perspective. *Journal of International Agricultural and Extension Education*. 13(3): 33-45.

Johnson, J. E., J.H. Creighton, and E.R. Norland. 2007. An International Perspective on Successful Strategies in Forestry Extension: A Focus on Extensionists. *J.Extension [Online]*, 45(2). Featured Article 2FEA7

Jones, S.B., G.R. Glover, and J.C. Finley. 2001. Empowering private forest landowners: Lessons from Pennsylvania, Alabama, and Oregon. *J. For.* 99(3):4-7.

Measells, M.K. S.C. Grado, H.G. Hughes, M.A. Dunn, J.O. Idassi, and R.J. Zielinske. 2006. Educational Needs of Southern Forest Landowners. *J.Extension [Online]*, 44(5), Research in Brief 5RIB4.

Sagor, E.S., A.M. Kueper, C.R. Blinn, and D.R. Becker. 2014. Extension Forestry in the United States: A National Review of State-Level Programs. *J. For.* 112(1):15-22.

Schroeder, J., D.R. Becker, and M.A. Kilgore. 2011. State forestry programs, budget strategies, and the recession. Department of Forest Resources Staff Paper Series, Staff Paper 213, University of Minnesota, St. Paul, MN. 16p.

Serenari, C., M.N. Peterson, R.E. Bardon, and R.D. Brown. 2013. The impacts of the Great Recession on state natural resource Extension programs. *J. Extension. [Online]*, 51(4), Article 4FEA11.

Zhao, M., D.B. Kittredge, and P. Catanzaro. 2012. Challenging the Traditional Forestry Extension Model: Insights from the Woods Forum Program in Massachusetts. *Small-Scale For.* 11: 87-100.

Tanger, S., J.E. Johnson, J., W. G. Hubbard, M. Sissock, and E. Norland. 2017. Learning from our Past, Designing our Future: New Directions in Regional & National Forestry & Wood Products Extension. SREF-SR-001.