

2017 ANNUAL REPORT | Southern Regional Extension Forestry

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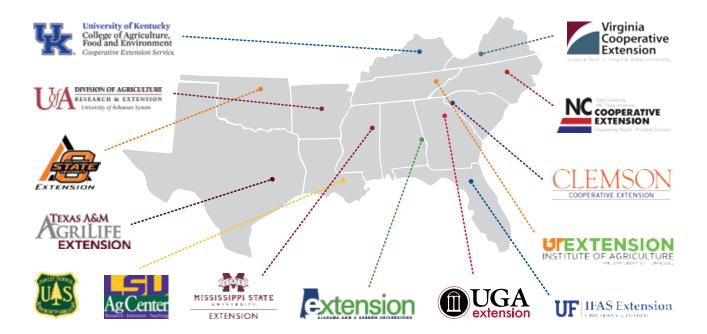
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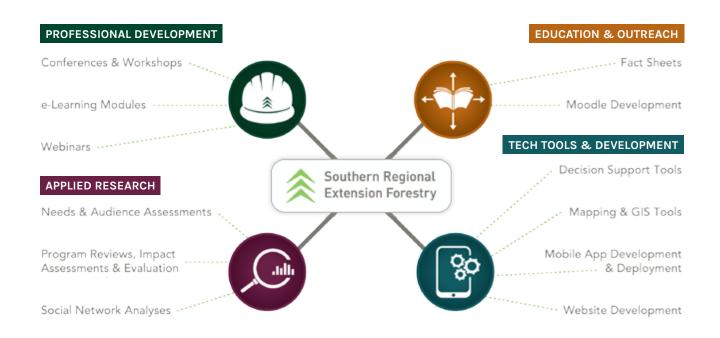
SREF is a diverse team of trained natural resource educators, IT specialists, graphic designers, communications and marketing experts, and media content producers. We work closely with our partners at land grants, the US Forest Service, and state forestry agencies to develop content, tools, and support for the forestry and natural resources community. Bringing our partners together on the issues, we strive to build a more efficient and cohesive community for greater reach and impact.

Mission:

To serve the Southern Land-Grant University System, USDA Forest Service, and the forestry profession through collaborative development of forestry technologies and programs to improve the efficiency, effectiveness, and relevance of supporting institutions.

Partners:





Programming Areas:

- Biomass / Bioenergy
- Climate Change
- Forest Management & Economics
- Forest Health & Invasive Species
- Forest Restoration
- Urban Forestry
- Wildland Fire
- Wildlife



LETTER FROM THE REGIONAL FORESTER



Natural Resource Extension Colleagues and Partners,

I am pleased to present you with the following annual report. From these pages you'll catch a glimpse of the depth and breadth of our office's productivity over the last 12 months. Over ten faculty, staff and students maintained a furious pace working collaboratively with our partners from the Southern Land-grant Universities and the US Forest Service. Throughout these efforts, our goals have remained the same; to work closely with our partners to respond to needs and opportunities, to develop high quality materials, and to deliver professional Extension and educational programs and materials that have measurable impact. I feel very confident in reporting to you that we have not only achieved these goals, but exceeded them in many ways.

With the results of the needs assessment of Extension forestry and natural professionals that we conducted in late 2016 and early 2017 as a guide, we sought to meet the needs of our partners more effectively by addressing their comments, suggestions, and concerns. As part of this renewed focus on partner relationships, we organized a retreat for Extension forestry and natural resource professionals at Cheaha State Park in Delta, Alabama October 10-11, 2017. The outcomes of that meeting, described later in this report, offered tremendous insights and opened fresh avenues for collaboration and partnership in 2018. Additionally, we began a push to strengthen the interconnectedness of our Extension forestry and natural resources community by developing the National Extension Forestry and Wood Products Directory, an online resource connecting users to all forestry, wood products, and natural resources Extension professionals in the United States.

Last year, our staff again created, edited, and supported the development of many fact sheets, online learning materials, websites, mobile applications, and other educational materials, all of which have the express purpose of enhancing and promoting our partners' projects and programs. As you read this year's annual report, which has been organized around our foundational ties to the US Forest Service and the 13 Southern Land-grant Universities, please note how each of our projects, products, and services is aimed at adding value to and fostering collaboration between our partners from the roots up.

We look forward to another productive year working with you in 2018 and beyond and hope you'll keep in touch with input, ideas and anything else you might need from us.

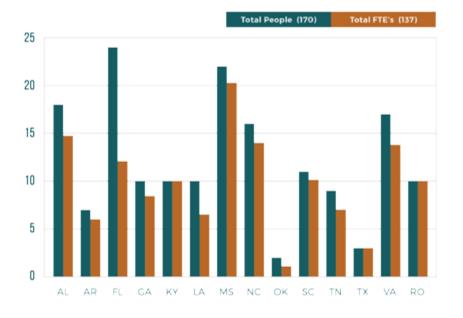
Sincerely,

William G. Hulbard

William G. Hubbard, Regional Forester

The region is comprised of much diversity and specialization throughout the ranks. Over 170 professionals cover numerous general and specific topics in their day-to-day programming. State and regional (RO) breakdowns for FTEs are provided in the following figure. While some states such as Mississippi and Kentucky continue to promote the hiring of 100% Extension specialists, other states such as Florida and Virginia believe in 'split' appointments with teaching and research responsibilities.

FTES IN THE SOUTHERN REGION







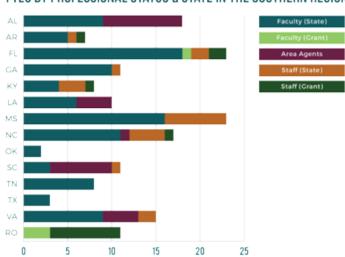


FROM OUR PARTNERS

"SREF's presence within the region and country have brought our programs here at NCSU higher visibility and respect. Fellow researchers, industry partners and state and federal agencies know who we are and what we do better because of SREF's seat at many tables."

Mark Megalos, PhD., Extension Professor, Forest & Environmental Resources, NCSU

FTES BY PROFESSIONAL STATUS & STATE IN THE SOUTHERN REGION

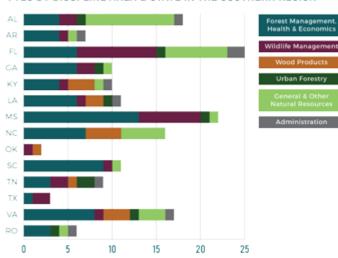


The graph on the left depicts the variability by state with regards to professional status. Some state Extension natural resources units are comprised solely of faculty specialists, while others have a mix of faculty and staff funded through various state and grant resources.

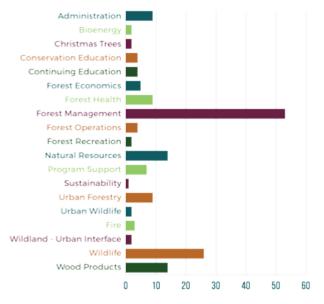
The wide diversity in programming disciplines by state is evident in the graph at the lower left. Some states have a cadre of specialists in each discipline while others show a clear dearth.

The graph on the lower right shows the specialty areas that many Extension natural resources professionals are hired to manage.

FTES BY DISCPLINE AREA & STATE IN THE SOUTHERN REGION



DISCIPLINE AREAS - DETAILED (170 TOTAL)



The survey of southern Extension NR professionals also revealed a number of other interesting characteristics as highlighted in the info graphics on this page. The majority of the educators in the region continue to be male faculty with state responsibilities on state funding with an average age over 40. This trend is changing though as universities push towards more grant-funding and diversity within their ranks.



AGE CLASS

2 36 61 42 26 2

Faculty outnumber staff in the south by 3 to 1. Most faculty are located on state campuses and many teach and conduct research in addition to their Extension appointments. Staff are diverse and work on a variety of state and grant-funded projects.

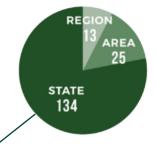
While most FTE's are located on campus, several states have area and multi-county agents. States such as Louisiana, South Carolina, Mississippi and Virginia have area agents and faculty to further the reach of landgrant research and development.

While historic data does not exist with regards to state vs. grant funded capacity, it is evident that the trend continues towards increasing grant funded faculty and staff doing Extension natural resources work.

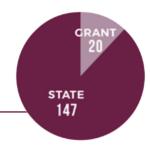
PROFESSIONAL STATUS



PROGRAMMING SCOPE



FUNDING SOURCE





FROM OUR PARTNERS

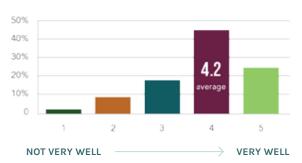
"Whether it be facilitating economic summits, publishing research and extension publications or partnering on extramural funding, I've been able to gain opportunities that otherwise would not be available to me had SREF not been a partner."

Shaun Tanger, PhD., Assistant Professor, LSU AgCenter, Louisiana State University

2017 NEEDS ASSESSMENT RESULTS

SREF was charged with conducting a needs assessment of their stakeholders; state level Extension specialists, Directors, ANR Program Leaders and forestry deans/directors. In particular, SREF was interested in identifying important forest resource issues and opportunities that would benefit from regional collaboration. Overall, Extension specialists, Extension Directors and others in the survey ranked SREF services highly. SREF will use the results of this survey in 2018 and beyond to meet the needs of their stakeholders.

HOW WELL IS SREF MEETING OUR GOALS & OBJECTIVES?

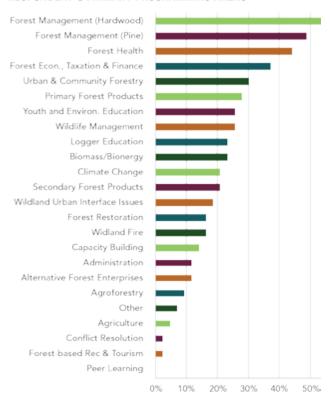


NEEDS ASSESSMENT QUOTES

"SREF serves as a multiplier for our efforts with the result that the whole (states) becomes more than the sum of its parts."

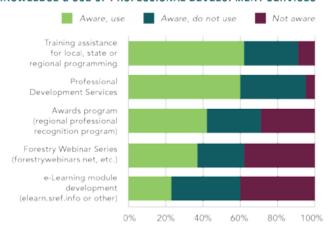
"I think the goals and objectives are still relevant. Would suggest potentially developing a vision for the overall program."

RESPONDENT'S PRIMARY PROGRAMMING AREAS

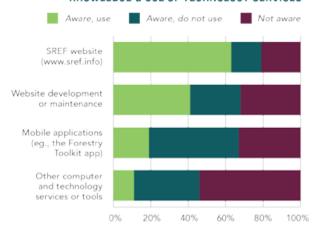


Respondents (over 33% completed the survey), were involved in a diverse set of Extension forestry & natural resource programs. Hardwood and pine management programs remain a stronghold for most Extension professionals.

KNOWLEDGE & USE OF PROFESSIONAL DEVELOPMENT SERVICES



KNOWLEDGE & USE OF TECHNOLOGY SERVICES



SREF's diverse services are well-known and utilized by some of the Extension FNR professionals in the Southern United states, but not by others. Respondents were fairly aware of the assistance we provide in professional development for example, but not aware of the increased development of e-Learning modules and even the opportunities associated with the *forestrywebinars.net*.

For more information about the results of the survey and plans for the use of its results, contact Bill Hubbard or Leslie Boby at contact@sref.info.



FROM OUR PARTNERS

"SREF helped me get in touch with other forest extensionists in other states through their listservs and regional meetings. The programming brought Extension peers together to share knowledge and experience in the field and promotes potential collaborations among us."

Yanshu Li, PhD., Forest Economics and Taxation Outreach Specialist, Warnell School of Forestry and Natural Resources, The University of Georgia

Issue #1: Forest resiliency in the south is negatively impacted by undesirable insects, diseases and pests.

SREF RESPONSES: In concert with the USDA Forest Service, Forest Health Unit, State & Private Forestry, SREF created the Southern Forest Health Outreach and Education Program (FHIS) to educate and create materials for natural resources professionals in the areas of forest health and invasive species.

2017 OUTPUTS AND IMPACTS: Over 150 Extension and state forestry agency professionals participated and gained valuable knowledge from five hands-on workshops held in several states in the Southern Region. FHIS hosted eight webinars reaching over 3,200 participants in live or archived sessions. Knowledge improvement and savings due to the webinars have been substantial. The Initiative also reached 400+ Facebook and 1,600+ Twitter followers. FHIS staff co-authored five articles and fact sheets, covering insects, fungi and plans. These fact sheets focused on identification and management strategies.

Issue #2: Forestry and natural resources organizations and professionals must continue to adapt to a changing technological landscape, adopting the latest in web and mobile application technologies to keep up with public demand.

SREF RESPONSES: SREF staff maintain 60+ websites for Extension and natural resources organizations containing countless educational resources in cutting edge formats. SREF also created forestrywebinars.net, an innovative online education platform that delivers webinars, both live, and on demand, to county agents, specialists, and the public at no cost.

2017 OUTPUTS AND IMPACTS: Forestrywebinars.net

hosted 108 live webinars with 25,600+ 'live' participants between them; a 39% increase in users from last year. An additional 33,600 users participated in on demand webinars. SREF staff developed 3 new websites and a new citizen science mobile application, AVID (*aviddeer.com*), available soon on Android and iOS.

Issue #3: Although the forest products industry is an economic powerhouse in the Southeast and has the potential for even more growth, many people aren't aware of its benefits and how they can harness and cultivate them.

SREF RESPONSES: SREF was invited to submit a proposal with LSU, UK and others to develop training and education tools for county agents and other local educators to promote the importance of forests, forestry and wood products at the county level. IMPLAN data and websites such as *forestryimpacts.net* and *forestproductslocator.net* will be employed to create templates and training for local use.

2017 OUTPUTS AND IMPACTS: SREF continued to host and update *forestryimpacts.net*, *forestproductslocator*. *net*, and *gaforestrystats.info* and to leverage their web presence to increase the awareness of the importance of forest products to the economy of the southeastern United States.

Issue #4: Extension wood products including bioenergy capacity is at an all-time low at a time when opportunities and needs are at an all-time high.

SREF RESPONSES: In collaboration with Clemson University, SREF staff completed and rolled out the national askforwood. com website for Extension agents and organized a webinar to promote its value and use. Ten southern regional wood products Extension Specialists attended a strategic planning retreat in the fall of 2017 leading to the planning of a national meeting to be held in the fall of 2018.

2017 OUTPUTS AND IMPACTS: Over 100 participants attended a recent askforwood.com webinar and SREF continued to highlight the importance of forestry and wood products in each of the thirteen southern states through the dynamic *forestryimpacts.net* website.

Issue #5: Extension capacity to deliver urban forestry programs limits the impact that land-grant universities have on citizens who live in communities and cities across the Southern US.

SREF RESPONSES: SREF initiated the Urban Forestry Extension Working Group and held several calls in 2017 to begin the process of developing a stronger network of urban forestry experts

2017 OUTPUTS AND IMPACTS: Applied research results from the office of SREF showed that urban forestry research and development grants return on average \$4 for every \$1 invested. SREF has planned a ten-installment regional webinar series for county agents.

Issue #6: Tens of thousands of family forest owners in the South are unaware of the benefits and opportunities associated with owning their properties.

SREF RESPONSES: SREF has initiated a regional landowner education short course strategy. All southern states were invited to participate in late 2017. Missouri and West Virginia have also expressed interest.

2017 OUTPUTS AND IMPACTS: A regional committee was formed to begin the process of creating a region-wide forest landowner short course series with related materials. SREF identified key partners and funding sources. SREF will plan and organize the short course in 2018 began its roll out in 2019.

Issue #7: Landowners, professionals and homeowners need education and Extension resources to make informed decisions to reduce the threat & impact of wildland fire.

SREF RESPONSES: SREF initiated an Extension Wildland Fire Working Group, received NIFA funding for Master Gardener training materials development, and continued development of a regional website containing valuable Extension information.

2017 OUTPUTS AND IMPACTS: SREF held five regional calls in 2017 with an average of 9 people on each call. Call participants shared resources, ideas and programming. SREF assisted with a special session on Extension and education needs in wildland fire at the 7th International Fire Ecology and Management Congress. Over 45 professionals attended and shared resources and ideas for joint activity and programming. Presentations are available at *fireecology.org/2017-Videos*.

Cheaha State Park, Alabama





On October 11-12, 2017, SREF staff organized a retreat for forestry and natural resource Extension professionals working in the southeastern United States. The retreat was held at Cheaha State Park in Delta Alabama and drew a crowd of over 60. The retreat's goals were to foster relationships between Extension natural resource professionals across the region; to achieve a greater understanding of key issues; to expose participants to new techniques and skills to improve reach and impact; and to uncover opportunities for shared leadership in the development of regional programming. Dr. Gary Lemme, ACES Extension Director and Dr. Janaki Alavalapati, Dean of the School of Forestry & Wildlife Sciences provided introductory comments and perspectives. These presentations were followed by USDA NIFA and USFS representatives providing a national view on natural resources Extension and opportunities for funding. Bill Hubbard, Regional Forester also provided an overall viewpoint of Extension natural resource capacity, issues and opportunities for attendees to think about over the next few days.

The presentations focused on the current and future of Extension forestry and natural resources, and the fundamental importance of remaining relevant to stakeholders. After a workshop session on Program Impact and Evaluation, participants self-selected into one of several programming area-specific groups to discuss issues, challenges and opportunities for collaboration. The programming areas represented were forest and wood products; economics, management, and taxation; urban and community forestry; wildland fire; forest health; wildlife management; and landowner engagement.

The retreat concluded with some final presentations on key issues, such as the Extension Disaster Education Network (EDEN) and the proposed Extension Forestry Mentoring Program, and reports on the findings of each programming area group. Feedback from the meeting was positive. Participants rated its quality at 4.2 on a 5-point scale and 65% of attendees said 'yes' and 30% said 'maybe' when asked whether they would consider attending a similar meeting in the future.

To see a full summary of the 2017 Southern Regional Extension Forestry and Natural Resources Retreat, please visit https://sref.info/news/articles/results-of-the-2017-southern-extension-natural-resources-forestry-retreat and download the full report.



> Askforwood.com

This website is designed to assist Extension agents and others learn about wood products and their role in healthy forests, a better environment, and improved rural economies. Resources are available to facilitate educational activity with stakeholders and communities in order to increase the conversation regarding increased wood use especially in the non-residential construction market.

> Forest & Agricultural Resiliency Technology Transfer Efforts

Southern forests and farms are directly impacted by catastrophic weather and long-term climatic changes. SREF has provided leadership in the development of materials, training

activities, and research technology transfer through proven networks. Specifically, SREF staff and partners developed fact sheets, webinars, e-Learning modules and a certificate program for Extension agents and others interested in learning more about the subject and implementing climate and weather related programs at the local level. Visit www.pinemap.org and <a href="https://www



> Forest Health & Invasive Species

SREF sponsors the Forest Health and Invasive Species Outreach and Education Program (FHIS) to bring forest health training to forestry, natural resources, and Extension professionals across the southeastern United States. Activities occurred in South Carolina, Virginia and Alabama. Presentations were given in several other states. The project has been funded for an additional 3 years through the HSDA Forest Service.

> Southeastern Partnership for the Advancement of Carinata

SREF will provide the Extension lead for a multi-state, multi-year, \$15 million project to develop the winter crop Carinata (Ethiopian Mustard Seed) as a biofuel for the jet airline industry. In this manner, staff of SREF are able to utilize both their forestry and agricultural connections across the project area as well as their experience in promoting Extension and adult education principals.

> Master Gardener Training: Preparing for Wildfires with Firescaping

SREF will be working collaboratively with southern region partners to develop an online training course for Extension educators and Master Gardener volunteers. Powerpoint slide decks and e-Learning methods will be incorporated along with utilizing nontraditional and innovative outlets to promote project resources.

Bioenergy (se-ibss.org)

- Fact sheets
- 5-year Carinata bioenergy project (August 1, 2017)

Climate materials (pinemap.org, climatelearning.net)

• eXtension - Climate, Forests & Woodlands

Forest Health (southernforesthealth.net)

- Webinars
- Fact sheets
- Workshops and presentations

Forest Restoration (shortleafpine.net)

Fact sheets

New Technologies

- Version 2 of Service Forester's Handbook (2018)
- Many new websites and updates to current sites
- Deer damage citizen science mobile app

Webinars

- Forestrywebinars.net
- Conservationwebinars.net
- Climatewebinars.net
- Bioenergywebinars.net

Wildland Fire (southernwildfire.net)

- Fact sheets
- Webinars
- Success stories
- Master Gardener training modules (expecting fall '18 release)

Wood products

- Ask for wood training and development website
- · Leadership of national Extension Wood Products meeting

Urban Forestry

(http://articles.extension.org/trees_for_energy_conservation)

- eXtension & USDA Forest Service partnership
- Youtube Videos featuring local and regional Extension pros
- Evaluating the impact of federal investments in urban forestry







4.700+ positive post reactions

followers with a growth

27% from 2016



WEBSITES
were designed and developed.
websites were given overhauls.



WEBSITES
were hosted and maintained
with aggregate total of 360,000+ users.







WEBINARS were organized & facilitated.



FACT SHEETSwere written or co-authored.

6 journal articles were co-written for peer-reviewed journals.



TECHNICAL REPORTS
were edited, compiled, and written

1 white paper was written.



17 GRANTS
were served on as PIs or co-PIs
were new in the 2017 year and 11 grant
proposals were submitted.







25 COMMITTEES were served on.



80 CONFERENCES & MEETINGS

were attended by SREF staff in 44 cities in the U.S. and 3 internationally.



PRESENTATIONS
were delivered at 40+
meetings, workshops, and conferences

DAVID COYLE

Extension Associate, Forest Health & Invasive Species



Forest Health & Invasive Species

Extension Associate Dr. David Coyle continued the development and expansion of the Southern Forest Health and Invasive Species Outreach and Education Program (FHIS). In addition to maintaining an active and voluminous social media presence, Dr. Coyle published an Extension fact sheet on the invasive gypsy moth and 2 publications in peer-reviewed journals, organized and facilitated 8 webinars on forest health topics, and organized 4 Extension training workshops for natural resources professionals and agents. Started in 2015. FHIS offers online and in-person training in the identification and management of native and invasive insects, fungi, and plants in southern forests. Visit FHIS and explore its resources at southernforesthealth.net.

HOLLY CAMPBELL

Extension Associate, Urban Forestry & Wildland Fire



Wildland Fire

In 2017, Holly Campbell took a leadership role in wildland fire educational programming. Ms. Campbell organized a bimonthly meeting of southeastern Extension personnel focused on wildland fire; co-led a special session and round table discussion on fire education at the Association for Fire Ecology Congress; wrote 12 wildland fire success stories for her work with the Cohesive Fire Strategy, and organized two webinars on Fire Adapted Communities and Fire Prevention Education Teams. She also began writing a smoke management guide for landowners using prescribed fire (completed 2018) and received a USDA NIFA grant to develop a fire-resistant landscape training for the Master Gardener program in the southeast. E-mail hcampbell@sref. info to learn more.

STEVEN WEAVER

Extension Associate, Geospatial Applications & IT Programmer



National Extension Directory of Forest & Wood Products Professionals

Steven Weaver, IT Extension Associate, worked tirelessly in 2017 to launch the National Extension Forestry and Wood Products Directory, an online database that provides a searchable and downloadable directory of Extension contacts across the nation. The Directory contains forestry and natural resources Extension educators and specialists who, collectively, cover 48 areas of specialization in forestry and wood products, and 16 areas of specialization in Extension program development, delivery, and evaluation. Visit the Directory at efwpdirectory.sref.info or e-mail sweaver@sref.info to add your information to the database!

HIGHLIGHTS & NOTABLE RESOURCES: WEBINAR PORTAL

The forestrywebinar portal continues to be one of the most successful activities ever undertaken by SREF and its partners. With a joint planning team of Extension, FS and state agency professionals, the forestrywebinars, launched in 2010 continues to lead the way on a number of fronts. The cutting edge technologies behind the portal includes tools for webinar coordinators, presenters, participants, and certifying agencies alike. The success of the forestrywebinars.net in the early days has lead to the creation of several 'sister' sites including conservationwebinars.net, climatewebinars.net and bioenergywebinars.net. A redesign is in the works for 2018 that will included increased functionality and measuring instruments for long-term evaluation purposes.

4.0/5.0



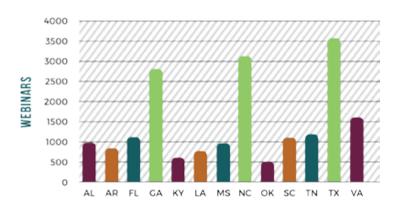
LIVE: 25,657 | ON-DEMAND: 33,658 | TOTAL VIEWS: 59,315

14,970 total participant ratings

TOTAL VIEWS BY AUDIENCE GROUP	
Academic (nonExtension)	294
Extension	394
Other Public (federal, state, county or local)	7234
Farmers & Landowners	881
NGO's	293
Not-specified or other	5922
Private Industry	1306
Forester	705
Loggers & Timber Companies	665
Volunteers (Master Naturalist/Gardner for eg)	82
Managers & Consultants	1287

"We need more webinars like this that allow the producers to share the good/ bad and ugly of any system. This allows people to learn from others and grow from it. Thank you for the work that goes into making a great webinar."

2017 WEBINAR PARTICIPATION IN THE 13 SOUTHERN LAND GRANT STATES





FROM OUR PARTNERS

"Working with SREF has been instrumental in building my relationship with others throughout the region. This has been instrumental in developing a very successful national webinar platform."

Robert Bardon, PhD., Associate Dean of Extension & Engagement, College of Natural Resources, NCSU

2018: WHAT'S NEXT FOR SREF

We move into 2018 equipped with more information than ever about our partners' unique needs and challenges. Fortunately, our efforts in 2017 have also provided us with the necessary information to continue to meet those needs and aid them in tackling new challenges. Our exploration of our partners' interests uncovered many new project opportunities, two of which will be of paramount importance in 2018: the resurrection and expansion of a program similar to the Master Tree Farmer program and the development of an onboarding system for Extension forestry and natural resource professionals getting started in the field. Other exciting projects in 2018 include an Urban Forestry Initiative that will include a 12-part series of online webinars, the continuation of our popular Southern Forest Health and Invasive Species Outreach and Education Program (FHIS), and an expansion of our work with the National Cohesive Wildland Fire Management Strategy.

In 2018 we will continue to incorporate new technologies and best practices in our quest to meet the needs of our stakeholders and partners. New enhancements for our webinar portal to better quantify impact to the Extension system as well as working with partners to develop more decision support tools for forestry consultants and landowners are just two examples of key directions and activities we are headed in 2018 and 2019. Others projects and products are planned. Updates will be provided via social media and our website.







FROM OUR PARTNERS

"SREF stays on the leading edge of issues and technology helping to keep us relevant and responsive in the field with practical information and useful delivery tools. SREF is also very responsive to state level needs. They are great partners."

Adam Downing, Extension Agent, Forestry & Natural Resources, Virginia Cooperative Extension

Extension Fact Sheets

Campbell, Holly. (2017). Texas A&M Forest Service Conducts Fire Weather Webinar. Retrieved March 22, 2018 from http://www.southernwildfire.net/success-stories/texas-a-m-forest-service-conducts-fire-weather-webinar.

Campbell, Holly. (2017). Texas Video Raises Awareness of Prescribed Fire. Retrieved March 22, 2018 from http://www.southernwildfire. net/success-stories/texas-video-raises-awareness-of-prescribed-fire.

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Campbell, Holly. (2017). Targeted Fuel Reduction Protects Texas Cancer Facility from Wildfire Retrieved March 22, 2018 from http://www.southernwildfire.net/success-stories/targeted-fuel-reduction-protects-texas-cancer-facility-from-wildfire.

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Campbell, Holly. (2017). Aggressive Prescribed Fire Program Reduces Wildfire Severity: An Eglin Air Force Base Case Study. Retrieved March 22, 2018 from http://www.southernwildfire.net/success-stories/eglin-air-force-base-aggressive-prescribed-fire-program-reduces-wildfire-severity-acres-burned.

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Campbell, Holly. (2017). National Wildfire Coordinating Group Leadership Subcommittee Discusses Leadership Development in Wildland Fire. Retrieved March 22, 2018 from http://www.southernwildfire.net/success-stories/national-wildfire-coordinating-group-leadership-subcommittee-discusses-leadership-development-in-wildland-fire.

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Campbell, Holly. (2017). Shaded Fuel Break Protects Local Neighborhood from Potential Wildfires. Retrieved March 22, 2018 from http://www.southernwildfire.net/success-stories/ shaded-fuel-break-protects-local-neighborhood-from-potential-wildfires.

Campbell, Holly. (2017). Virtual Wildfire Experience Can Assist with Wildfire Planning, Prevention and Training. Retrieved March 22, 2018 from http://www.southernwildfire.net/success-stories/ virtual-wildfire-experience-can-assist-with-wildfire-planning-prevention-and-training.

Kauffman, B.W., W.K. Clatterbuck, A.M. Liebhold, & D.R. Coyle. (2017). Gypsy moth in the southeastern U.S.: biology, ecology, and management strategies. Southern Regional Extension Forestry Publication SREF-FH-008.

Maggard, Adam, Boby, L., Monroe, Martha. Florida Trees Store Carbon in Forests and Wood Products. Retrieved March 22, 2018 from http://edis.ifas.ufl.edu/pdffiles/FR/FR40900.pdf.

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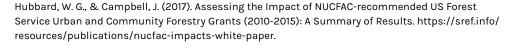
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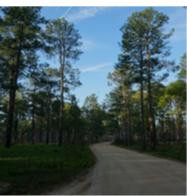
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