

Forestry, Wildlife & Natural Resources Team Impacts 2019

► The mission of the Alabama Extension Forestry, Wildlife, and Natural Resources team is to provide the latest science-based information available to make decisions regarding the management of natural resources.

Forests cover more than two-thirds of the state. Significant contributions to Alabama's economy are provided from these forest resources through wood products, hunting and other outdoor recreation, and improved water quality.

- In 2017, the forest industry generated \$16.3 billion in product shipments and 41,600 direct jobs.
- Alabama ranked second in the United States in pulp production, second in paper and paperboard production, and sixth in lumber and panel production in 2018.
- Outdoor recreation generates \$14 billion in consumer spending, \$3.9 billion in wages, and 135,000 jobs.
- Each year, 55 percent of Alabama residents participate in outdoor recreation.

Healthy, well-managed forests are essential to support these industries. Our team of experts works across the state to provide timely, science-based information on all aspects of natural resource management to land managers and residents of Alabama.

Wildlife Management: Enhancement and Damage

Project Leaders: Jim Armstrong and Mark Smith

Background: Alabamians spend more than \$2.2 billion a year for wildlife-related recreation with most of these expenditures made by 1.1 million wildlife watchers (\$734 million) and 535,000 hunters (\$913 million per year). These individuals spend more than 14.3 million days per year engaged in these two outdoor activities. The Wildlife Management: Enhancement and Damage project assists clients in managing Alabama's natural resources. Management may involve programs and one-on-one contacts to improve wildlife habitat or to minimize or eliminate damage caused by wildlife. Enhancement programs cover topics ranging from backyard bird watching and planting food plots for deer to managing habitats for wild turkeys and learning about pond management.



In 2019, several Management Minute segments were recorded regarding habitat enhancement, predator control, forest manipulation, food plot implementation, and herbicide usage. These were featured on the Buckmasters television show airing on the Outdoor Channel, which is available through most major cable and satellite television providers. The Outdoor Channel has an estimated 40 million subscribers throughout the United States. Our team of experts also provides leadership and technical expertise for a suite of natural resource management programs including field days, seminars, and on-site technical assistance for adult clientele and interactive learning experiences for young people.

Wildlife damage and legal ways to address these problems comprise a significant amount of work for regional Extension agents and specialists. These activities may be in the form of one-on-one contacts (phone calls, emails, office visits) or structured educational programs. Backyard wildlife damage programs focus on vertebrate species that may cause damage to structures, yards, and ornamentals or that pose health threats. Program topics include squirrels, chipmunks, moles, voles, rodents, bats, snakes, and white-tailed deer.

The goal of these activities is to educate clients in how to identify damage and take actions necessary to eliminate it, either by contacting a professional or by using the information provided to address the problems themselves.

Number of Participants: 3,713

Audience Diversity: 54% Male, 46% Female; 74% White, 26% African American; 67% Youth, 33% Adult

Conservative Direct Impact Estimate: \$715 per contact (using a conservative estimate of \$200 per call based on the cost for professional assistance) and \$1,230 per enhancement expenditure (based on 2006 National Survey of Fishing, Hunting, and Wildlife Associated Recreation)

Return on Investment: 62:1



Wild Pig Damage Management

Project Leader: Mark Smith and Bence Carter

Background: Wild pigs are found in nearly all 67 Alabama counties causing more than \$55 million a year in agricultural and forestry damage. This project provides hands-on technical training to landowners and natural resource professionals who work with landowners (i.e., training the trainers). It provides practical, cost- and time-effective approaches for reducing or eliminating local populations of wild pigs resulting in reductions in agricultural and natural resource damage. This project uses multiple approaches to reach a diversity of audiences including in-person seminars and demonstrations, print and electronic publications, and short how-to videos available on the Internet.

Collaborators: USDA Natural Resources Conservation Service, Alabama Wildlife and Freshwater Fisheries Division, USDA Wildlife Services, Alabama Farmers Federation, Soil and Water Conservation Districts, National Wild Turkey Federation

Number of Participants: 328

Audience Diversity: 97% White, 3% African American

Evaluation Techniques: Event surveys, in-person technical assistance

Adoption Rate: 99%

Conservative Direct Impact Estimate: \$787,200 in damage reduction on more than 156,128 acres of farm and forest land in Alabama and neighboring states.

Return on Investment: 161:1

Key Project Resources: Wild Pig Education Unit Trailer, "Landowner's Guide to Wild Pig Management," Alabama Extension Fresh from the Field Wild Pig how-to video series on YouTube



How to Build a Corral Trap for Wild Pigs
123,458 views • Apr 25, 2013

Forest Business Resources: Increasing the Health and Wealth of Private Forestland in Alabama

Project Leader: Adam Maggard

Background: The focus of this project is to enhance the livelihoods of Alabama residents through the betterment of forest management, business practices, and increased opportunities for producing income. Specifically, the information and tools focus on temporary or small-scale income-producing opportunities and owning and operating a value-added business to assist private forest owners in achieving their goals and objectives. The project educates landowners on the benefits of healthy forests and how practicing forest management can not only enhance the health and resiliency of forests but also enhance opportunities to generate income from forests that can potentially be used to support the costs of forest management practices.

Collaborators: Forestry, Wildlife, and Natural Resources Regional Extension Agents, County Extension Coordinators, County Forestry Planning Committees, Alabama Forest Owners Association, Alabama Forestry Commission, Alabama Forestry Association, Alabama Treasure Forest Association, Forest Landowners Association, and Alabama Forests Forever Foundation

Number of Participants: 36 events, 2,223 participants

Audience Diversity: 32% Female, 68% Male; 80% White, 19% African American, less than 1% Other.

Evaluation Techniques: Event surveys, follow-up discussions and interviews 6 and 12 months post event.

Direct Impact of Forest Business Resources

- Specialist Leads—Adam Maggard, Becky Barlow
REA Leads—Bence Carter, Spenser Bradley,
Norman Haley
- Approximately 353,014 forestland acres owned or managed by participants in Forest Business Resources workshops
- Estimated \$5.1 million in improved forestland value, recovered loss, and financial decision making based on information learned

Return on Investment: 262:1



Direct Impact of Online Course—Forest Principles, Practices, and Stewardship for Landowners

- Specialist Leads—Adam Maggard, Becky Barlow, Jim Armstrong, Beau Brodbeck
- Participants from five states including Alabama, Florida, North Carolina, Tennessee, Georgia
- 5,036 timberland acres owned or managed by participants of this workshop
- Estimated \$721,000 in improved forestland value from information learned and applied

Return on Investment: 360:1



Community Forestry

Project Leaders: Beau Brodbeck and Jack Rowe

Background: The focus of this project is to improve the health, safety, and resilience of Alabama's community forests by increasing the professionalism and safety of commercial and municipal workers. This project also helps increase the knowledge of community forestry managers to implement and demand proper tree care.

Number of Participants: 1,620

Audience Diversity: 80% Male, 20% Female; 87% White, 9% African American; 2% Hispanic; 2% Other

Impact Assessment of Community Forestry's Chainsaw Safety Program

Background: The field of arboriculture is regarded as one of the most dangerous industries. Most injuries are related to chainsaws, which result in 36,000 injuries and more than \$350 million in medical costs annually. Fifteen percent of workshop attendees reported having previously suffered a chainsaw injury and more than 28 percent (down from 80 percent in 2018) previously did not use proper chainsaw personal protective equipment (PPE). The combination of wearing PPE and training can result in more than a 60 percent decrease in chainsaw injuries. The goal of our program is to provide professional hands-on training to improve the safety of Alabama municipal and professional tree-care workers.

Extension Collaborators: William Rowe, Bence Carter, Spenser Bradley

Number of Participants: 209

Evaluation Technique: Event survey

Direct Impacts:

- 84% of workshop attendees purchased PPE
- 80% plan to wear PPE in the future when operating a chainsaw
- 52% more workers reported wearing PPE in 2019 than in 2018
- \$632,000 in avoided medical costs and lost productivity

Return on Investment: 38:1

Increasing the Professionalism of Tree Care in Alabama

Background: Successful community forest management is best accomplished when homeowners, municipalities, and utilities hire professional urban foresters and arborists. The International Society of Arboriculture provides a credentialing program that requires extensive knowledge, testing, and continuing education units (CEUs) for arborists to acquire and maintain certifications. Alabama Extension, with various partner organizations, provides research-based continuing education for professional arborists and courses aimed at helping aspiring tree workers become certified. Key indicators of improving tree care are a growing number of available credentialed arborists and cities with professional and active urban forest management plans.

Extension Collaborators: Jack Rowe, James Jacobi, Tony Glover

Agency Collaborators: International Society of Arboriculture Southern Chapter, Alabama Urban Forestry Association and Tree Fund.

Number of Workshop Participants: 910

Direct Impacts:

- 60 continuing education hours offered to arborists to maintain their professional license
- 4 new certified arborists in Alabama as a result of certification preparatory training
- 1 new urban forestry inventory in Alabama
- 1 new urban tree trail in Alabama



Impact Assessment for Community Forestry's ALA-TOM Program

Background: Rural towns and cities often face tree management problems they are not equipped to deal with. The cost of hiring consulting arborists or hiring qualified full-time personnel is prohibitive for most of these small rural communities. Instead, this program provides the resources of Alabama Extension and the ALA-TOM RC&D in the person of a qualified arborist/urban forester to consult on a part-time basis, spreading the benefits and costs as needed. Currently, there are 16 participating member towns and cities in the nine-county ALA-TOM district. Participating towns and cities pay \$30,915 per year for the services of Jack Rowe. Each town and city represent hundreds to tens of thousands of Alabamians affected by the program.

Number of Workshop Participants: 121

Direct Impacts: \$512,750 in avoided consultation fees for program services

Return on Investment: 17:1

SmartMap: Low-Cost GIS and UAS Technology for Forest Management

Project Leaders: Beau Brodbeck and Christian Brodbeck

Background: In 2019, Alabama Extension in partnership with Auburn University's College of Engineering continued development of the SmartMap educational program. SmartMap explores a suite of low-cost geospatial and unmanned aerial system (UAS) technologies that are affordable, easily adoptable, and applicable to natural resource management. The program successfully married smart-devices (iPhones



and iPads), GPS units, geospatial applications (apps), and UAS to produce a low-cost and easy-to-use alternative for landowners and foresters to map forestland. The class provides hands-on tutorials and helps unpack the technology and make it accessible to forest practitioners. The program has garnered praise from attendees and has resulted in the greater implementation of GIS and UAS technology in Alabama. To attract new audiences, SmartMap produced a promotional video that resulted in 31 percent of the audience attending their first Extension program.

Number of Participants: 7 workshops totaling 100 attendees

Audience Diversity: 94% Male, 6% Female; 89% White, 9% African American; 2% Hispanic

Evaluation Technique: Event survey

Direct Impacts:

- 31% attended their first Extension program
- 51% intend to purchase a GIS mapping app and drone technology
- 75% believe this technology will improve the profitability of their timberlands
- 79% found this technology improved communication between landowners and natural resource professionals
- Key project personnel invited to speak at four professional conferences on GIS and UAS technology





Family Forests: Increasing Enjoyment from the Backyard to the Back 40

Project Leader: Becky Barlow

Background: With its broad reach, this project encompasses forestry- and wildlife-themed workshops, short courses, field days, professional conferences, and web-based events such as webinars and videos that empower Alabamians to make informed land management decisions.

Extension Collaborators: Forestry, Wildlife, and Natural Resource Regional Extension Agents, Extension Specialists, County Extension Coordinators

Other Collaborators: County Forestry Planning Committees, Alabama Forestry Commission, Alabama Forest Owners Association, Alabama Natural Resources Council, Alabama Water Watch, Westervelt, Regions Bank, Alabama Ag Credit

Number of Participants: 3,275 in 68 events

Audience Diversity: 41% Female; 23% Youth; 75% White, 22% African American, 3% Other

Evaluation Techniques: Event surveys, follow-up discussions 6- and 12-months post event



Direct impact of ForestHER Workshops

- Specialist Lead: Becky Barlow
REA Leads: Spenser Bradley, Bence Carter, Doug Fulghum, Norm Haley
- More than 13,000 forestland acres owned or managed by program participants
- Average of 70% increase in knowledge by those who participated in ForestHER workshops
- Estimated \$9.1 million in improved forestland value based on information learned

Return on Investment: 660:1

Invasive Plant Identification and Control

Project Leader: Nancy Loewenstein

Background: Invasive species reduce forest health and productivity across the state. This project provides in-service training, educational events, and publications for a wide range of stakeholders including forest landowners, foresters and other natural resource land managers, federal and state agency personnel, natural resource educators, Master Gardeners, Master Naturalists, and the general public. Members of the team organized one statewide conference, six workshops, and field tours and provided content for two regional workshops, three natural resource educator workshops, three Master Gardener and Master Naturalist meetings, and six other meetings. Team members also participated in five youth activities where native or invasive plants were featured.

Extension Collaborators: Andy Baril, Spenser Bradley, Beau Brodbeck, Bence Carter, Norm Haley, Matthew Hartzell, Jim Jacobi, Dan Porch, Chuck Simon



Agency collaborators: Alabama Invasive Plant Council, Alabama Forestry Association, County Forestry and Natural Resource Planning Committees, Southern Regional Extension Forestry, Birmingham Botanical Gardens

Number of Adult Participants: 984 at 29 events

Number of Youth Participants: 243

Adult Audience Diversity: 59% male, 41% female; 95% White, 4% African American, and 1% Other

Evaluation Techniques: Real-time and post-event evaluations, survey of attendees of past meetings

Overall Impact Estimate: Impacts range from homeowners and landscapers not planting invasive species to improved invasive plant control through increased ability to identify invasive plants, use of more effective methods of control, more effective and safer use of herbicides, and encouragement to take action. Forest health and productivity are ultimately improved through enhanced control efforts, more acres treated, and fewer plants escaping. Impacts are amplified through training of federal and state agency personnel who share timely information with their clients. Natural resource professionals also value the affordable continuing education credits provided through many of our programs.



Impact Estimates, Land Managers:

- **Acres Impacted:** 2.5 million acres owned or under the management of program participants
- **Adoption Rate Among Land Managers:** 96%
- **Acres Treated:** 150,000 acres of invaded land controlled with more effective methods

Return on Investment: 22: 1



Alabama Watershed Management

The Alabama Watershed Management Project develops and demonstrates management practices to enhance the development and implementation of effective watershed education, monitoring, planning, and improvement. Project efforts include training in water and watershed management using demonstrations and stakeholder meetings at the watershed level, incorporation of management practices into landowner education programs, and facilitation of volunteer water monitoring workshops. Project outcomes include improved knowledge of watershed best management practices, increased adoption of watershed best management practices, and improved conditions of water resources as documented by Alabama Water Watch (AWW) volunteer water monitors.

Alabama Water Watch

Project Leader: Mona Dominguez

Extension Collaborators: Sergio Ruiz-Córdova, Sydney Smith, Rachel McGuire, Carolina Ruiz

Background: The focus of Alabama Water Watch is promoting community-based, science-based watershed stewardship in the state through water monitor training and promotion of data-to-action strategies in local water resources management. In 2019, AWW conducted 116



training sessions that resulted in 610 volunteer monitor certifications for 491 individuals. In addition to training workshops, AWW staff conducted educational programs that reached more than 2,600 young people and adults.

Number of Participants: 3,100

Audience Diversity: 50% Male, 49% Female; 64% White, 26% African American, 6% Hispanic

Evaluation Technique: Analysis of volunteer monitor data submitted to AWW database

Impact Estimates

- Volunteers spent 5,162 hours (valued at \$131,270) conducting training and collecting 3,182 water data records.

- The Alabama Department of Environmental Management requested all AWW water data from the past five years. This totaled 21,450 records worth more than \$3.9 million, providing the state with significant savings in their own personnel conducting this water monitoring. ADEM uses the data to determine if a body of water is meeting the specific water quality standards set for its use classification and to focus water quality monitoring priorities.

Return on Investment: 18:1

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