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## Experiences from a Forestry Extension Long-term Impact Evaluation

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## **Experiences from a Forestry Extension Long-term Impact Evaluation**

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*This report describes a long-term impact evaluation conducted by a Forestry Extension program. Documenting long-term impacts is increasingly important to demonstrate the perceived public value of Extension programming. However, the extended time frame of forestry activities creates challenges for technology transfer, including the realization of learning objectives and reporting to administrators and public officials. Mississippi State University has attempted to address these challenges through in-person impact evaluation. Three years of results are presented from an ongoing long-term impact assessment conducted after clients received forestry information from an educational program. The assessment demonstrated 31% of clients had implemented forestry practices since attending Extension educational programs. Almost 47% planned to implement practices in the future, and over 73% reported Extension educational programs helped them be more profitable in forest management. Methodological challenges and implications for future educational efforts are discussed.*

*Keywords:* impact, evaluation, forestry, long-term, assessment

### **Introduction**

Many Forestry Extension programs are considering implementing long-term impact assessments. As Extension competes with other publicly-funded programs for legitimacy and attention from lawmakers, assessment of long-term effects – particularly behavior change – from educational programs is increasingly important for sustainability. Long-term impact has been measured in programs such as 4-H (Lodl & Stevens, 2002), nutrition (Koszewski et al., 2011), and financial literacy (Meraz et al., 2013), among other topics. However, long-term impact assessments are

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less common in agricultural areas of Extension and virtually nonexistent in forestry programs. A 2013 article by Lamm et al. noted that federal funding requires medium- and long-term impact evaluation under the Government Performance Results Act of 1993. However, the authors noted few Extension professionals measure long-term impacts, despite common post-session surveys. Without better documentation of long-term impacts, Extension programs risk having a lower perceived public value.

Forestry Extension efforts are particularly difficult to measure due to the prolonged nature of forestry enterprises. Depending on the time period considered, most other Extension programs (e.g., 4-H, Master Gardeners, healthy living) can quantify behavior change of clients between one and five years. By comparison, client actions in forestry may take place in 10- to 15-year intervals or longer. For the most part, clients take over a year before implementing practices suggested during an educational program due to the large investment in time and financial resources required in forest management. In cases where behavior change occurs in less than a year, a forestry educational program may have contributed to the change, but the management decision was likely made prior to attending the educational program.

Thus, defining the assessment period is challenging for Forestry Extension programs. A six-month post-session evaluation is too soon for the majority of clients to have made any behavior changes. However, recall diminishes after a year (Dillman, 2000), with clients forgetting when, where, and from whom they learned something before it influenced their action. While the long-term time horizon of forestry operations can make institutional change uncomfortable, Extension must continually adjust to such contradictions in order to effectively benefit clientele. The objective of this brief report is to provide an example of a long-term impact assessment effort from a Forestry Extension program. We hope that other programs can learn from our experience and initiate their own long-term impact assessments.

### **Methods**

Since 2016, Mississippi State University has measured long-term impacts using a two-page questionnaire distributed during local forest landowner association meetings by Mississippi State University personnel. Evaluations were completed during the program and returned immediately to the Extension personnel. Each of 63 landowner associations in Mississippi received one long-term impact evaluation per year, with evaluations distributed approximately one year after an educational program. As such, some landowner associations had received up to three long-term impact evaluations since 2016. At each program, Extension personnel explained the reason for the evaluation and how it benefited the Extension program as well as clientele.

The questionnaire addressed the number of Extension Forestry programs attended, implementation of information learned, intent to implement information, reasons for not implementing information, whether information was shared with other landowners, and individual background information (race, age, gender, participant type, acres owned, type of

client – e.g., landowner, forester, logger). Other than background information, most response queries were open-ended. In addition, two questions measured the perceived value of Extension information. One dichotomous choice question asked if landowners avoided management mistakes or unnecessary costs as a result of information learned. Another dichotomous choice question asked whether the Extension information helped the client save and/or earn money from forestland management, with an open-ended estimate of value (in dollars) following an affirmative response to the initial question. For all questions, participants were asked to consider only the information they had received from Mississippi State University programs. Readers interested in obtaining a copy of the evaluation can contact the corresponding author.

## Results

Data reported in this Brief Report were collected from January 1, 2016, through July 10, 2018, at 130 Forestry Extension meetings. In total, 2,884 individuals completed evaluations. The majority of evaluation participants were landowners ( $n = 2,483$ ), and on average, attended 2.2 Forestry Extension programs for a total of 6,078 programs. Participants owned and/or managed 10,233,545 acres of forestland in 78 of the 82 Mississippi counties in addition to counties in six other states.

Of the completed evaluations, 1,006 individuals (34.9%) responded to an open-ended question regarding forestry practices they had implemented since attending an Extension program. Of those who had implemented recommended practices, the top three activities stated were prescribed burning (27%), thinning (22%), and reforestation (14%); evaluation participants did not note the specific features of the practices taught by Extension. A reported 900,111 acres were impacted by all practices implemented. In addition, 1,327 (46%) individuals indicated they planned to implement practices at an appropriate time in the future on 1,242,504 acres, with the majority being implemented within the next year (31.0%). An additional 29.6% said they would implement practices in the next two years from when they completed the evaluation.

The majority of evaluation participants (72.0%) indicated the programs helped them avoid poor/bad management decisions or avoided unnecessary costs. The majority (76.8%) estimated that programs helped them save and/or earn money – for a reported total of approximately \$26,857,007. Most participants (85.4%) reported they shared information they learned with family members or landowners who were not in attendance.

## Discussion and Future Directions

While our effort to document long-term impacts is not a panacea, it contributes to the diversity of tools available to Extension professionals. An evaluation conducted 12 months after an educational intervention is not especially innovative; however, the activity of conducting a long-term impact assessment is unique for Forestry Extension programming. Our long-term impact approach has demonstrated the value of our Extension program to clients. For example, the most

implemented practice, prescribed burning, is a confirmatory result of intense educational efforts and substantial financial resources to increase prescribed burning among landowners.

Several challenges exist, however. For example, long-term impact data collection requires great effort to track survey distribution by year and county. In addition, perceived valuation measures are not perfect, and reporting avoidance of mistakes due to Extension programming is only a representation of perceived benefit. Still, results have been used by administration during budgetary conversations with lawmakers, the University president, and others to demonstrate public value of the program. In an era of budget cuts and competition for funding, long-term impact on behavior change is critical to the sustainability of Extension programming.

The methods in this report can easily be replicated. Long-term impact assessment is possible through dedicated staff and ongoing data collection. A single data collection point is unlikely to have the degree of effect on decisionmakers as ongoing collection. An ideal evaluation would contain questions concerning the impacts of a specified program for improved accuracy; however, this may require a well-developed email list to distribute the questions to identified clients. In any case, such an intensive practice of evaluation requires the commitment of personnel who are willing to distribute surveys and/or communicate an upcoming event to a data collector. While not always easy, it is an effort that results in high dividends for both the program as well as individual personnel evaluations. Keeping pace with a changing society can be challenging and expensive. However, losing contact with our clientele is not a risk Extension can afford to take.

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