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Robert A. Pierce II

University of Missouri, Columbia, Missouri

H. E. Stelzer

School of Natural Resources, University of Missouri, Columbia, Missouri

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Approaches for Delivering Integrated Forestry and Wildlife Extension Programs: The Missouri Woodland Steward Short Course and Missouri Master Wildlifer Program

Robert A. Pierce II

Department of Fisheries and Wildlife Sciences, School of Natural Resources, University of Missouri, Columbia, Missouri

H. E. Stelzer

Department of Forestry, School of Natural Resources, University of Missouri, Columbia, Missouri

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Extension educational programs related to the stewardship of Missouri's natural resources have been identified as a priority in the MU College of Agriculture Food and Natural Resource's "Extension Base Program" (MU CAFNR 2001). Citizens own approximately 94% of the land in the state and therefore manage most of the natural resource base, including forests, agricultural lands, prairies and grasslands, wetlands, streams, and other natural habitats. Abundant natural resources, renewable and nonrenewable alike, provide for agriculture and timber production as well as recreational opportunities, each of which are directly or indirectly responsible for a majority of the economic activity within Missouri. Wildlife populations and habitats are also influenced by changing land and water uses, with private landowners having much discretion over these uses.

Over 75% of Missouri's forested lands are privately owned; however, approximately 13 million acres of these woodlands are producing at less than one-half of their potential for wood product output. Less than 15% of the 360,000 private forest landowners utilize professional forestry services. Even less (10%) involve any professional forestry services at the time of timber harvest. Also, one the primary reasons forest landowners own property is to enjoy nature and wildlife recreation opportunities. Over 70% of Missouri residents participate in fish and wildlife recreational activities, and the demands for these resources from private lands, as well as for associated economic and recreational opportunities, continue to increase (Missouri Department of Conservation 2000).

Traditional Extension approaches, including workshops and field days, have been very successful in providing information on the stewardship of natural resources to private landowners in Missouri. However, with changing landowner demographics and interests in owning property, more recent Extension forestry and wildlife programs have been designed to account for changes in landowner attitudes, interest in acquiring knowledge and developing management skills, and fulfill their aspirations to adopt and implement new management practices. A renewed emphasis has been placed on creating a learning experience that enables landowners, managers, and Missouri citizens to make informed decisions regarding the wise stewardship and conservation of the forest resource, and regarding the management of wildlife populations and the variety of ecosystems upon which they depend.

Ryan and Deci (2000) identified intrinsic and extrinsic motivations important to the adult learner. Although extrinsic factors (i.e., rewards) are important, intrinsic motivations play an equally significant role, reflecting the natural propensity to learn and assimilate new knowledge. Educational programs have been designed to help adult learners to feel *competent*, *autonomous*, and *connected* (as suggested by Ryan and Deci 2000). Two "*knowledge-based*" educational programs designed to train adult learners on the management of Missouri's forest and wildlife resources, "Missouri Woodland Steward Short Course" and the "Missouri Master Wildlifer Program," reinforce these elements.

Each program is conducted independently of one another, yet integrated when it comes to managing farms and woodlands for timber and wildlife objectives. Both programs feature collaborative learning

experiences and coached planning opportunities with natural resource professionals. Fredrickson (2001) suggested that enhancing positive emotions is an integral part of designing meaningful educational experiences for the adult learner. Through this process, adult learners will not only gain new knowledge of basic forestry and wildlife management practices, but also will have success in implementing management practices on their property. In addition, these programs feature a learning experience that provides positive reinforcement from an MU Extension Specialist, a natural resource professional, as well as from featured landowners. Another benefit of this approach is that the program facilitators can more efficiently direct their time and energy by working with several landowners at once throughout the learning process and in the development of their management plans.

These programs are conducted in partnership with the Missouri Department of Conservation and therefore serve to strengthen the collaboration between Extension and local natural resource professionals in delivering adult landowner education. Each of these programs also potentially serves as a lead-in to more comprehensive Missouri-based forestry and wildlife Extension programs such as “Forestry First Responder” and “Missouri Master Naturalist Program”.

Evaluation tools have been developed to measure program impacts. Landowner education is measured by a series of pre- and post-tests to assess their level of knowledge gained as a result of program participation. Landowner action is measured by the number of participants that contact a natural resource professional for assistance, by the number of stewardship plans that are written, and the number of acres placed under active management.

As mentioned, learners provide a self-assessment of their level of knowledge on various forestry and wildlife concepts prior to the program and of their knowledge gained as a result of participating in each program. This information is critical to evaluate the value and impact of these programs. In addition, a 6-month follow-up survey provides information on the number of management practices that have been adopted, and on whether the participant has worked with a natural resource professional and/or developed a management plan.

Missouri Woodland Steward Program

Since 2001, Missouri landowners have had the opportunity to learn about forestry and wildlife management through a southern-based distance learning short course: “Master Tree Farmer”. While well attended, participants wanted more emphasis on Missouri’s hardwood forests, integration of management concepts that were common to both programs, and a shorter format. Stelzer and Pierce (2005) developed the Missouri Woodland Steward Short Course to meet these needs. In addition to integrating basic forestry and wildlife management concepts and practices, the DVD-based program consists of 4 sessions with 12 hours of instruction. It weaves landowner interviews and walks around their woodlands with professional presentations. The short course concludes with a capstone field trip to reinforce concepts learned in the indoor sessions.

The short course consists of 4 indoor sessions, which include:

1. Getting started in managing your property for forestry and wildlife objectives
2. Forestry management concepts
3. Wildlife management concepts, and
4. Integration of forestry and wildlife concepts and development of a management plan.

By culminating with a capstone “walk in the woods” field day, landowners have the opportunity to gain basic knowledge of forest and wildlife management techniques and learn how to begin implementing management practices to improve their woodlands. This short course covers the high points and leaves the “in-depth” learning opportunities for the advanced programs, such as the Missouri Master Wildlifer Program. Educational goals include:

1. Improve Missouri landowners’ level of awareness as to the benefits of active forest and wildlife management
2. Enable landowners to begin managing their woodland acreage for forest and wildlife objectives

3. Increase in number of landowners that seek professional advice as they manage for forestry and wildlife objectives on their property
4. Increase in number of Missouri landowners that actively manage their woodlands, and
5. Increase in number of privately owned acres under active forest/wildlife management.

A manual, speaker's notes, and supplemental educational materials serve as curriculum for the short course. As of August 2006, the short course has been conducted at 9 MU Extension Center locations, with 175 landowners participating. An additional 13 locations have planned to conduct the program over the next 6 months. Preliminary evaluations indicate that this program has been very successful in addressing the identified goals and objectives. Assessments indicate an increase in knowledge of forest and wildlife concepts. So far, over 30,000 acres have been impacted, with about 50% of these acres in forest land. Approximately 75% of the participants have indicated their willingness to develop a management plan to help guide their forestry and wildlife management decisions.

Missouri Master Wildlifer Program

The Missouri Master Wildlifer Program was developed to provide science-based information on wildlife ecology and management concepts to private landowners interested in applying wildlife considerations into their land management and stewardship objectives. This educational program, conducted in a short-course format, consists of a series of 8 planned 2½-hour instructional modules (approximately 20 hours of programming) that features the biology, life-history, and management of selected wildlife species and their habitats. In addition, the program focuses on the management and stewardship of Missouri's major ecological systems. Goals and objectives for the program include:

- Participants understand basic ecological concepts and management techniques for selected wildlife species in Missouri
- Participants gain knowledge for applying practices that improve habitats for Missouri wildlife
- Enable landowners to begin managing their land for wildlife objectives
- Increase the number of acres under active wildlife management.

An understanding of basic ecological concepts and processes that influence wildlife management constitutes the major theme for each session. The 8 sessions conducted during the 2006 Missouri Master Wildlifer Program includes:

1. Basic Ecological Concepts and Wildlife Management
2. Bobwhite Quail/Grassland Bird Ecology and Management
3. White-tailed Deer Biology and Management
4. Wild Turkey Biology and Management and Managing Woodlands for Wildlife
5. Waterfowl and Wetlands Ecology and Management
6. Aquatic Ecology: Ponds and Streams
7. Furbearer Biology and Wildlife Damage Management, and
8. Managing for Wildlife Diversity, Managing Invasives/Exotics, Wildlife Management Assistance

Pierce and Seek (2006) developed a Missouri Master Wildlifer Program Manual, speaker's notes, learning objectives, and supplemental materials, which served as curriculum for the short course. Each participant received these materials over the course of the program.

The 2006 Missouri Master Wildlifer Program was conducted and delivered live (from the MU Extension Technology and Computer Services Center) to 10 MU Extension Centers and MU TeleCenters across the state during February and March of 2006, with 136 landowners participating. A combination of distance-education (Interactive TV) and electronic conferencing (CENTRA) technology was used to deliver the program. In addition, each session was saved in an electronic format so that the program could be delivered as a video conference at additional MU Extension Centers on a "delayed" basis. As of August 2006, two MU Extension Centers had conducted the program using this format, with 56 landowners participating. MU Extension and Missouri Department of Conservation resource professionals facilitated the program at each site.

One hundred ninety-two (192) landowners participated in live and taped-delayed programs, impacting approximately 40,000 acres. As discussed earlier, evaluation of impacts included both a pre- and post- course survey, which relied on the participants providing their self-assessment of ecology and wildlife management knowledge gained as a result of the program. The effectiveness of the program (i.e., whether the training improved the participants' level of perceived knowledge of the ecological concepts and wildlife management topics covered) was analyzed. Based on preliminary results, it can be determined that the Master Wildlifer Program is an effective way of delivering science-based information that emphasized wildlife ecology and management concepts to adult learners. In addition, initial survey results indicate that over 80% of the participants plan on implementing management practices for wildlife benefits as a result of this educational program.

Conclusions

The Missouri Woodland Steward Short Course and Missouri Master Wildlifer Program provide examples of integrated forestry and wildlife Extension educational programs delivered in a format that takes advantage of video and distance education technology to reach an expanded statewide audience of landowners interested in the stewardship of the state's natural resources. Although each program is conducted independently, each has similar attributes in terms of program development, delivery, implementation, and evaluation.

The success of each program is dependent on partnerships created with the Missouri Department of Conservation and other natural resource organizations. Natural resource professionals help facilitate program delivery at both state and local levels, and provide local expertise with MU Extension educators at each location that the programs are conducted. Hopefully, an increased number of landowners will improve their knowledge of forestry and wildlife management concepts and become motivated to implement management practices that enhance their woodlands and improve wildlife habitats that complement their landownership objectives.

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