

Ranching with Wildlife: Teaching Sustainable Livestock Production Practices for Wildlife Habitat

Final report for ES17-136

Project Type: Professional Development Program

Funds awarded in 2017: \$78,838.00

Projected End Date: 09/30/2019

Grant Recipient: Texas A&M AgriLife Extension Service

Region: Southern

State: Texas

Principal Investigator:

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Texas A&M Agrilife Extension Service

Project Information

Abstract:

Truly sustainable agriculture provides system stability on the land for humans, wildlife, and the land. From the farmer to the butterfly, both humans and wildlife rely on agricultural systems. Today, the ability to capitalize on wildlife resources provides farmers or ranchers with additional financial flexibility during difficult times. This option did not exist 100 years ago, but for many, can make the difference between a family agricultural operation remaining in business, or selling out. At the same time, many wildlife populations rely on habitat created and maintained by agriculture, such as waterfowl in rice fields on the Gulf Coast, or quail and prairie chickens on the prairies. For rural communities, the effects of developed wildlife industries helps create jobs, retain citizens, and provide for healthier rural America. In many parts of rural Texas, support businesses based on hunting form much of the local economy. Finally, many wildlife species provide services in the form of crop pollination and pest control worth billions to producers. Thus, in providing for truly sustainable agriculture, it is critical for producers to understand how to produce agricultural products without degrading natural resources, and the wildlife that live on working lands.

This project was designed to provide County Extension Agents (CEAs) with the fundamentals of wildlife management as it relates to grazing lands in Texas, specifically native or mixed-native rangelands. We provided four, two-day training events to over 104 CEAs in Texas. This represents an order of magnitude increase in CEAs qualified to provide this expertise. These events, in conjunction with online webinars, provided CEAs with roughly 50 hours of education on wildlife management. The behavior-based outcomes we identified in our proposal saw a dramatic increase in CEAs abilities, confidence, and knowledge. Based on these survey results, we feel that we provided more than half of the working Agriculture and Natural Resources CEAs in Texas with training to bring greater sustainability to the ranching operations of Texas. In terms of acres impacted, this work will reach millions of acres of rangelands, many of which are arid environments particularly

fragile and difficult to keep sustainable in the facing of changing economies and ecosystems.

Project Objectives:

This project was conceived by interviewing Texas A&M AgriLife Extension Service County Extension Agents (CEAs), as well as agricultural producers who utilize these agents. After my first year as an Extension Wildlife Specialist, it became clear that most CEAs were not prepared to offer advice on wildlife management for producers. Staff at Texas Parks and Wildlife Department confirmed that, while that agency provides limited technical assistance to producers, they do not have the perspective on agricultural production to tailor recommendations to integrate with production needs. In order to effectively provide producers with advice and education based on sound science, there are several general categories in which participants will receive training.

1. Ability to Conduct Habitat Evaluations for Producers

Participants will learn how to evaluate the potential for various wildlife species to inhabit a given property based on habitat needs. This is likely the most important element of providing wildlife management advice to producers. After training, participants should be able to target key habitat features, vegetation needs, identify relative quality and quantity of food resources, and current status of target wildlife species on property. These will address needs in game management for mammals and birds, as well as non-game management for alternative wildlife enterprises, such as bird watching. Additionally, special evaluation of endangered species habitat needs and status will be taught.

2. Knowledge of How to Target Wildlife Management Strategies

Aside from evaluating habitat quality on a property, the ability to prioritize management strategies is critical for economic returns to producers. Participants will learn how to prioritize both (1) species and (2) locations for management, based on habitat evaluation, above. As a result, they can direct producers to the wildlife management options best suited to their property in its current state, long-term management directions and needed practices to achieve goals. This includes, but is not limited to identifying regions of the agricultural property that are better suited for target wildlife species, or times of year where habitat is available to provide for these species and/or their use.

3. Providing Producers with Wildlife-Livestock Integration Solutions

Although not necessarily incompatible, some livestock production schemes are not optimal for wildlife production. Participants will learn about (1) potential competition between wildlife and livestock for food, habitat, or both; (2) modifications to livestock management that keep production on-track while allowing wildlife to thrive on the same property; and (3) planning wildlife and livestock management schedules that minimize conflicts between production needs and wildlife user experience.

4. *Advising on Developing and Growing Wildlife Enterprises*

It is one thing to have wildlife resources to capitalize on, but another entirely to successfully market and develop the business. Experienced ranchers, hunting outfitters, consultants, and tourism professionals will train participants on how successful, sustainable wildlife business is developed on agricultural lands. This training will include development of both consumptive (hunting) and non-consumptive (wildlife watching, hiking, camping, etc.) tourism, laws related with various businesses, and marketing strategies to optimize returns on investment. While participants will not be qualified to dispense legal advice, their familiarity should allow producers to navigate their options with minimal need to enjoin a legal counsel.

Desired changes in behavior: Participants will be comfortable and confident providing agricultural producers with timely, relevant advice on how to best steward wildlife resources on their property, capitalize on these resources, and understand legal matters surrounding certain species, including their options for mitigating effects on agricultural production.

Participants successfully completing this course will receive a certificate of completion certifying their proficiency in sustainable wildlife management in agricultural systems.

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Education

Educational approach:

This project uses both hands-on and classroom education to provide County Extension Agents with the knowledge and skills to better integrate wildlife management with livestock production on rangelands. Hands-on trainings consist of 2-day intensive, experiential, on-site learning for participants in the aspects of wildlife management, list above, on which agricultural producers regularly require advice. Teachers will consist of professional wildlife biologists from various governmental agencies, private NGO staff, private ranchers, wildlife tourism outfitters, and others. We will host 5 trainings across the course of this project, which will cover much of the variation in climate, topography, and production types in Texas. Trainings will be conducted with no more than 20 participants per event. This ensures high-impact learning. The emphasis in trainings will be on experiential learning. Although classroom lectures will address some items out of necessity, behavior-based objectives, listed above, will largely be achieved through hands-on, in-the-field learning. Classroom education helps inform field experiences, and provides context for methods learned. Also included are lectures on agribusiness with wildlife and integration with livestock, as well as laws and regulations related to wildlife that may impact livestock raisers on rangelands.

Education & Outreach Initiatives

Integration of Wildlife Management with Livestock Production

Objective:

To provide Texas A&M AgriLife Extension Service County Extension Agents with the knowledge and skills necessary to assist livestock producers seeking to integrate wildlife management as part of their overall business operation.

Description:

We conducted four hands-on trainings as well as a series of classroom lectures to 104 County Extension Agents during this project. These events provided in-the-field learning on a variety of topics related to wildlife management in the context of working lands. Topics consisted of assessing density and abundance of various game species, including white-tailed deer, wild turkeys, quail, and dove, as well as assessment of habitat quality for these species. Students participated in surveys for all species on property, and generated assessments as part of a mini-project to advise the landowner. After abundance estimations, assigning stocking rates for livestock with regard to wildlife abundance and diet needs were assessed. Participants were taught to understand and determine diet overlap between wildlife and livestock, and read common indicators of range resource overuse from overstocking.

The landowner provided perspective and education on their experiences integrating wildlife into their operation, the good and the bad. Opportunities and common pitfalls were discussed, and a tour of the property to demonstrate both good and bad habitat management outcomes were relayed by the landowner acting as an educator.

Agents received classroom education in wildlife agribusiness, including the up-and-coming field of bird and wildlife-watching. Training was provided in the basics of birding, marketing private lands as birding destinations, and infrastructure necessary to ensure successful, happy customers.

Outcomes and impacts:

Training Efforts and Outcomes

Education Provided

Over the course of this program, we conducted four, two-day trainings at locations around Texas. These provided education to 104 County Extension Agents (CEAs) with the Texas A&M AgriLife Extension Service. This number represents well over 50% of the currently-working Agriculture and Natural Resources CEAs.

Trainings were arranged into two-day events, with the first day focusing on assessment and management of wildlife habitat for various species, as well as considerations for grazing management for a variety of livestock species. Due to the regional nature of educational events, we were able to tailor ecosystems and livestock to those most commonly encountered by participants, providing a much higher overall quality of training.

We also provided multi-media, distance-based education in the form of webinars presented to CEAs by leaders in various fields of wildlife and livestock management. These webinars presented topics that are relevant to CEAs' interactions with clientele, but may be learned in a classroom setting. This preserved field training time for outdoor-only educational items. To date, recorded webinars have provided

over 800 hours of combined educational time to CEAs participating in this project, as well as other projects.

Behavior-Based Outcomes

1. Ability to Conduct Habitat Evaluations for Producers

Before beginning the training, 12% of participants reported feeling confident that they could provide a basic assessment of habitat availability for livestock producers. Following training, 93% of participants reported confidence in providing this service as part of their duties as a CEA.

2. Knowledge of How to Target Wildlife Management Strategies

Not only knowing what habitat can support which species, but understanding how to prioritize management efforts for maximum benefit to both livestock and wildlife is essential—both in space and time.

Before the training, 5% of participants reported confidence in targeting wildlife management strategies on a given property. Post-training, 87% of participants felt they would be able to provide this service.

3. Providing Producers with Wildlife-Livestock Integration Solutions

Integrating wildlife and livestock into one property's management goals can be simple—if the two do not compete for resources or space—or it can be extremely complicated. CEAs, often working with locally-based State Wildlife Biologists, can help tailor solutions to individual landowner needs.

Before the training, 23% of participants reported they could provide some insight on these matters, whereas after the training, 99% of participants reported they would be able to confidently provide landowners with support, either by themselves or with wildlife professional collaboration.

Beyond reports of knowledge gained, we have had CEAs that participated in this program conduct 254 programs to-date related to topics that they learned during this effort. The reported financial benefit (from ranchers) of those programs numbers in excess of \$10 million. Clearly, this effort was a success at changing behavior and enhancing the way we do business.

4. Advising on Developing and Growing Wildlife Enterprises

In Texas, as elsewhere in the United States, wildlife-based businesses are growing. For landowners engaged solely in traditional agricultural businesses, developing a wildlife enterprise can be overwhelming. Learning what to do, and how to grow a business in wildlife may confer stability to rural business in the future.

Before the training, 17% of participants reported the ability to provide some level of expertise on these matters, whereas after trainings 94% of participants reported confidence that they could advise and guide agricultural producers into these new arenas at a rudimentary level.

Product Creation

Printed, Agent Resource Materials

In the course of this project, every CEA was provided with a guidebook compiled with resources from various agencies and professionals, tailored to their county, that provides guidance on wildlife management in the context of Texas' rangelands. They

were also given an electronic copy of these resources on a USB memory drive, so they may make copies of individuals pieces and disseminate them to stakeholders. Many CEAs have gone on to use this as an everyday reference item in their work with agricultural producers.

Multimedia Training Resources

We created several web-based lectures from professionals for CEAs. These were presented live, with all participating CEAs invited to attend, allowing them to ask questions. We recorded presentations for perpetual use. These have been used internally over 800 times, and we anticipate greater use in the future as resources are distributed beyond the participants of this funded project. These items covered topics related to: Managing brush for wildlife and livestock, prescribed fire, wildlife law and wildlife business liability, multi-species grazing management for livestock and wildlife, and developing non-hunting wildlife business.

Project Outcomes

Overall, this project showed great success in the ability to teach CEAs the material needed to begin assisting their traditional clientele with interfacing with wildlife, from both an ecological and economic perspective. In the long-run, ranches that can integrate approaches and enterprises that keep their rangelands stable and livestock raising sustainable through the coming changes of the 21st century.

For CEAs to continue to support their traditional clientele—the landowning public of Texas—they must be able to arm these citizens with the knowledge, tools, and insight to maintain sustainability in a changing world. Increasingly, wildlife is important, but professional wildlife biologists do not have the on-the-farm or ranch expertise of yesteryear to help them interact with landowners. In this sense, CEAs have the unique opportunity to marry ecological and economic management of Texas' rangelands, promoting sustainability in the future.

Our project is a first step in two senses, (1) CEAs that participated have a basic knowledge now upon which they can build in the future with advanced trainings and professional development, and (2) it has shown Texas A&M AgriLife Extension Service leadership that this type of training has value. In the future, trainings will be conducted using internal resources, thereby leading to a multiplicative return on the invest made by the SARE program in this effort.

Already, many of the CEAs that were trained in the first year have implemented a multi-part educational series for their landowners on incorporating wildlife enterprises—both consumptive and non-consumptive—into their existing agricultural framework. These trainings have been very well attended, and ranchers have reported adopting many of the practices proposed. We anticipate this number to grow in the future.

Educational & Outreach Activities

254 Consultations

9 Curricula, factsheets or educational tools

4 On-farm demonstrations

15 Online trainings

5 Tours

5 Webinars / talks / presentations

4 Workshop field days

PARTICIPATION SUMMARY:

104 Extension

2 NRCS

5 Researchers

5 Nonprofit

10 Agency

6 Farmers/ranchers

Learning Outcomes

104 Participants gained or increased knowledge, skills and/or attitudes about sustainable agriculture topics, practices, strategies, approaches

104 Ag professionals intend to use knowledge, attitudes, skills and/or awareness learned

Project Outcomes

5 New working collaborations

Project outcomes:

Training Efforts and Outcomes

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104 Agricultural service provider participants who used knowledge and skills learned through this project (or incorporated project materials) in their educational

activities, services, information products and/or tools for farmers

2789 Farmers reached through participant's programs

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture or SARE.



This site is maintained by SARE Outreach for the SARE program and is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award No. 2019-38640-29881. SARE Outreach operates under cooperative agreements with the University of Maryland to develop and disseminate information about sustainable agriculture. [USDA is an equal opportunity provider and employer.](#)

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