

EVALUATION OF THE USDA'S FARM BILL CONSERVATION PRACTICES FOR WILDLIFE

INVESTIGATOR INFORMATION

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INTRODUCTION

Conservation practices under the USDA Farm Bill program have tremendous potential to improve wildlife habitat, especially across the South, since the majority of the region is privately owned by farmers and landowners. However, this potential can only be reached if guidelines for establishing and maintaining conservation practices provide the greatest benefit for wildlife. These practices, and their impacts on wildlife habitat, should be understood by NRCS personnel and natural resource professionals so that the most appropriate recommendations can be made to the landowners. In addition, landowners must be willing to adopt and implement these practices on their lands.

This project proposes to evaluate the current conservation practices for wildlife under the USDA Farm Bill and make recommendations for improving these practices for wildlife on Clemson University's Pee Dee Research and Education Center outside of Florence, SC. The eight practices used are from the Wildlife Habitat Incentive (WHIP) Program, which also can be found in several other USDA Farm Bill programs. Each practice (treatment) will be evaluated based upon vegetation response (structure and diversity) over time and response of wildlife (herpetofauna, avifauna, and small mammal). Factors that determine adoption of wildlife conservation practices by landowners will also be determined to encourage greater participation in Farm Bill programs for wildlife. An outreach component is a portion of this project—including workshops for NRCS personnel and landowners, and dissemination of results and recommendations through publications and web-based formats.

OBJECTIVES

- 1) Demonstrate and evaluate the eight cost-sharing farm and forest conservation practices under the USDA's Farm Bill Wildlife Habitat Incentives (WHIP) Program.
- 2) Make recommendations to USDA-NRCS on improving WHIP and other Farm Bill Conservation practices for wildlife.
- 3) To determine attitudes of landowners toward USDA Farm Bill cost-sharing programs for wildlife and factors that determine adoption of these practices.

PROGRESS TO DATE

Objective 1:

- I. Field borders
 - a. Seven (7) field borders have been established (Summer 2004) following NRCS guidelines using a fertilizer spreader to sow seeds.
 - b. Each field border was subdivided into equal sized plots and alternated in planting between those plots, leaving a fallow plot between 2 planted plots.
 - c. All border plots are being evaluated for structure suitability using a modified version of the Carolina Vegetation Survey (CVS).
 - d. Field borders will not be monitored for wildlife use, as the borders are too narrow to accurately judge use.
 - e. Maintenance is being done in these areas to determine if mowing versus disking is more suitable to stop invasive weeds such as sicklepod (*Senna obtusifolia*), horseweed (*Conyza canadensis* var. *pusilla*), and other species that are in the seed bank and shade out the native warm-season grasses (NWSGs).
- II. Filter strips
 - a. Two (2) filter strips have been established in the Summer 2004 and plots were made similar to the field borders as noted above. Conservation suitable grasses [e.g. Switchgrass (*Panicum virgatum*) and Coastal panic grass (*Panicum amarum*)] were incorporated into the NWSG mixtures.
 - b. All plots are being evaluated for structure suitability using the modified CVS.
 - c. Similarly to the field borders, maintenance of these areas are being conducted to evaluate better ways to eliminate invasive weeds without the use of herbicides that may kill desirable species. Mowing (height of 10 inches) and light disking are being conducted on a rotational cycle of 1/3 of the area per year.
- III. Native Warm-Season Grass Plots
 - a. Three (3) mixed stands of NWSG with legumes and one (1) pure stand—half with switchgrass and half with Eastern gamma grass (*Tripsacum dactyloides*) were planted in the summer 2004.
 - b. Two of the stands were mowed and burned in the winter of 2005 to control weed competition. At least 1/3 of all these stands have been burned in 2006 (February/March). Bermuda (*Cynodon dactylon*) and bahia (*Paspalum notatum*)

grasses have been encroaching these areas. Places that have been burned yearly since planting are not showing these grasses in the plots. Dogfennel (*Eupatorium capillifolium*) is in abundance in these areas as well. In some places dogfennel has gotten thick, so we are trying to determine the best way to manage these stands so that dogfennel does not dominate the fields.

- c. Wildlife monitoring will not be done in these areas but will be monitored for maintenance as they are for demonstration purposes.

IV. Riparian Buffer Zones

- a. In the early spring (2004), mast trees and bushes were planted in three (3) areas to create riparian buffer zones.
- b. We estimate that the survival rates in these areas were about 65-70 percent after the first year.
- c. We have postponed fertilizing these areas, as bermuda and bahia grasses have encroached the areas. We will try to eradicate the grasses first.
- d. Monitoring for wildlife will not be done until trees mature.

V. Hedgerows

- a. Four (4) hedgerows were planted in the spring (2004). All contain mast trees and shrubs.
- b. A 60 -70 percent survival rate has been maintained after the first year. However, we have found that after the second year, much of our losses had life still at the roots and our survival rate is about 80 percent in most areas.
- c. Fertilizer has not been added to these areas yet, as previously planned. Bahia and bermuda grasses have invaded these areas and we need to figure out how to get rid of it first.
- d. These areas will not be monitored for wildlife use until the plants mature.

VI. Forest Stand Improvements

- a. Understory chipping and harvesting was conducted in the fall and winter (2003-2004).
 - i. In young pine monocultures, every thirty-five feet (35) a five (5) foot strip was chipped in a linear fashion.
 - ii. In more mature woodlots, understory cutting was performed to open up the canopy. These mature stands have been reduced to a basal area of 60 sq. ft./acre (2006)
- b. Fall vegetation sampling (CVS) has been conducted in 2004 and 2005.
- c. Avifauna and herpetofauna occurrence was determined by point counts in May and July 2005 and 2006.

VII. Forest Openings

- a. Openings were placed in two types of scenarios—areas to be burned and areas with no burning. Six openings have been made (three per scenario).
- b. These openings were created using logging decks and then increasing the size of decks according to NRCS guidelines.

- c. Fall vegetation sampling (CVS) has been conducted in 2004 and 2005.
- d. Avifauna and herpetofauna occurrence was determined by point counts in May and July 2005 and 2006.

VIII. Prescribed Burning

- a. Although this practice is in the WHIP separately, we have incorporated prescribed burning in several of our other areas.
 - i. There are four (4) woodlots were burned with no other treatment. These areas are on a rotational burning cycle.
 - ii. Two (2) woodlots that have openings were burned. These areas are on a rotational burning cycle and will be burned this winter (2006-2007)
 - iii. All field borders, filter strips, and NWSG plots may be burned as needed for maintenance.

Objective 2—Maintenance practices (and their effects) on treatment areas are being conducted and archived with written and photographic records. Recommendations on maintaining treatments will be given to NRCS at the conclusions of the project. However, we have had several regional NRCS meetings at the research center and have informed them of progress and findings to date.

Objective 3—Landowner knowledge, typologies and attitudes toward USDA Farm Bill practices for wildlife will be determined during field days and workshops through a questionnaire. At the end of the field portion of the research, a thorough examination of landowner attitudes as well as motivating factors that cause landowners to participate (or not participate) in USDA Farm Bill practices for wildlife will be published as a part of this project. The questionnaire will use the survey tool similar to <http://www.surveymonkey.com>.

PRESENTATIONS

Knipp, L.A. and A.J. Savereno. Field Tour of WHIP research for guest, Robert M. Franklin. Pee Dee Research and Education Center, Florence, SC. January 30, 2006 (*oral presentation in field*).

Knipp, L.A. and A.J. Savereno. Field Tour of WHIP research for NRCS guests: Craig Ellis, Frank Wilcox, Lynette Savereno, and Wayne Cowell. Pee Dee Research and Education Center, Florence, SC, February 2, 2006 (*oral presentation in field*).

Knipp, L.A. and A.J. Savereno. Field Tour of WHIP research for Pee Dee Home and Garden Workshops. Pee Dee Research and Education Center, Florence, SC, March 11, 2006 (*oral presentation in field*).

Knipp, L.A., Yarrow, G., and A.J. Savereno. Wildlife Damage Management Workshop. Used various parts of research areas for wildlife damage scenarios for demonstration purposes. Pee Dee Research and Education Center, Florence, SC., March 15, 2006 (*oral presentation in field*).

Knipp, L.A. and A.J. Savereno. Field Tour of WHIP research for local landowners interested in alternative things to grow on the land. Muscadine plantings was also showcased. Pee Dee Research and Education Center, Florence, SC, March 22, 2006 (*oral presentation in field*).

Knipp, L.A., Yarrow, G., and A.J. Savereno. Longleaf Pine Planting Workshop and Landowner Tour, Pee Dee Research and Education Center, Florence, SC., April 18, 2006 (*oral presentation in field*).

Knipp, L.A. and A.J. Savereno. Field tour for forty 8th-grade students and faculty discussing alternative things to do for tobacco farmers. Pee Dee Research and Education Center, Florence, SC. May 12, 2006 (*oral presentation in field*).

Knipp, L.A. and A.J. Savereno. Field tour for distinguished international guests, Dr. and Mrs. Rory Harrington (Dept. of Environment, Heritage, and Local Government. Ireland). Pee Dee Research and Education Center, Florence, SC. May 31, 2006 (*oral presentation in field*).

Knipp, L.A. and A.J. Savereno. Field tour for neighboring landowners interested in the research we are conducting. Pee Dee Research and Education Center, Florence, SC. June 28, 2006 (*oral presentation in field*).

Knipp, L.A. and A.J. Savereno. Field tour for Evan Myers. Pee Dee Research and Education Center, Florence, SC. August 1, 2006 (*oral presentation in field*).

Knipp, L.A. and A.J. Savereno. Field tour for NRCS personnel. Pee Dee Research and Education Center, Florence, SC. September 11, 2006 (*oral presentation in field*).

PUBLICATIONS

To date written information about the project can be found on the website <http://habitatwildlife.com/>.

PARTICIPATING AGENCIES AND LANDOWNERS

Judy A. Barnes, Wildlife Biologist, South Carolina Department of Natural Resources. Judy has conducted Farm Bill workshops on the Pee Dee REC and highlighted this research.

Breck Carmichael, Wildlife Biologist and Federal Aid Coordinator, South Carolina Department of Natural Resources, Assisted in the design of the project.

Nicole Chadwick, Wildlife Biologist, South Carolina Department of Natural Resources. Aided in design of understory chipping for possible occurrence of red cockeyed woodpeckers for a neighboring candidate for Safe Harbor.

Billy Dukes, Wildlife Biologist and Project Leader for Small Game, South Carolina Department of Natural Resources. Aided in field tours for NRCS personnel.

Evan Myers, District Biologist, South Carolina Department of Natural Resources. Evan visited the project site and will promote this site for future landowner meetings.

Sam Stokes, Jr., Regional Wildlife Biologist, South Carolina Department of Natural Resources. Assisted in design ideas on onset of project.

Steve Moore, Forester, South Carolina Forestry Commission. Contracted to do all of our prescribed burns.

Joe Cockrell, Private Lands Program Coordinator in South Carolina. Coordinating of project with USFWS private lands program objectives.

Robert M. Franklin, South Carolina Senior Extension Agent, Clemson University. Held a Longleaf Alliance Workshop for landowners and used our research area as a showcase for field tours.

Landowners. Excluding landowners who have participated in field tours and workshops listed above, the following landowners who adjoin the research center have been active in the project: Mrs. Martha Herndon, Ben Williams, Edwin Dargan, Hugh Thompson, and Dewey Irwin.

NRCS INVOLVEMENT

John F. Bennett, Soil Conservation Specialist. John has aided in much of the technical support needed to carry out this project.

K. Wayne Cowell, District Conservationist. Wayne is the Darlington County representative that keeps our funding according to a “Special WHIP Project” guidelines so we can keep records of how much money would be spent by a landowner in similar fashion.

Sudie Daves, Wildlife Biologist of Orangeburg County. Sudie has visited the site numerous times and aids us in identifying plant species.

Craig Ellis, Assistant State Conservationist for Programs. Craig visited the research areas and is promoting the research to other NRCS personnel.

David N. Findley, Grassland/Forestry Specialist. David is Michael Hall’s replacement and is a source for information dealing with maintaining the native warm season grass plantings.

Ed Hackett, Wildlife Biologist, Wildlife Habitat Management Institute. Assured the project was funded.

Frank Wilcox, State Administrative Officer. Frank has visited the property where the research is being conducted and provided plans to have several meetings here for the added benefit of demonstrating these practices.

Dick Yetter, State Biologist. Dick came out to view the site and will do anything we need.