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Evaluation of Cost-share Assistance Programs as an Incentive for Wildlife Habitat Management and Conservation on Private Lands in Mississippi

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EVALUATION OF COST-SHARE ASSISTANCE PROGRAMS AS AN INCENTIVE FOR WILDLIFE HABITAT MANAGEMENT AND CONSERVATION ON PRIVATE LANDS IN MISSISSIPPI

By

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Cost-share programs to improve sustainable land and water use are offered from federal, state, and non-governmental entities to non-industrial private (NIP) landowners. Despite the broad attention given to the ecological benefits of these programs, far less attention has been focused on their social impacts and benefits. To achieve the desired environmental objectives laid out within these programs, natural resource agencies must work to maintain high levels of satisfaction and participation among private landowners. The purpose of the study was to examine the attitudes and motivations of participants enrolled in one of three cost-share programs in Mississippi and compare those with the views of natural resource professionals throughout the state regarding landowner attitudes and motivations. Overall, landowners had positive views of their program experiences and the views of natural resource professionals coincided largely with those of landowners.

DEDICATION

I would like to dedicate this research to my parents, Larry and Brenda Wigginton, whose love, patience, and support have allowed me to pursue my dreams.

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CHAPTER I

INTRODUCTION AND OBJECTIVES

Introduction

Most of the total land area within the U.S. falls under private ownership. As of 1997, privately owned rural land (consisting of cropland, pastureland, rangeland, and forestland) accounted for 71.7% of the total surface area within the contiguous U.S. (U.S. Bureau of the Census 2004-2005). However, in recent years, development and other anthropomorphic pressures have led to considerable declines in amount of private rural land within the U.S. From 1982 to 2001, total amount of privately owned rural land decreased from 73.1% to 71.1% (a decrease from 1,471,200,000 to 1,378,100,000 acres) while amount of total developed land (consisting of large urban and built-up areas, small built-up areas, and rural transportation land) saw an increase from 3.8% to 5.5% of the total land surface area (an increase from 72,800,000 to 106,300,000 acres) of the contiguous U.S. (U.S. Bureau of the Census 2004-2005). Urbanization has focused public concern on the significant loss and subsequent increased scarcity of high amenity public interest values, such as open space and wildlife habitat, on the urban fringe formerly associated with farmland (Marhsall et al. 2003). Aldo Leopold clearly understood and expressed this concern:

> *"If in a city we had six vacant lots available to the youngsters of a certain neighborhood for playing ball, it might be 'development' to build houses on the first, and the second, and the third, and the fourth, and even the fifth, but when we build houses on the last one, we forget what houses are for. The sixth house would not be development at all, but rather it would be mere short-sighted stupidity. 'Development' is like Shakespeare's virtue, 'which grown into a pleurisy, dies of its own too much.''' (Brown and Carmony 1990, p 159)*

The concern then becomes how much of a negative impact does development have and how can the impacts of development on our nation's private lands be mitigated. Existing literature recognizes the importance of private lands for conserving biodiversity in the future (Hilty and Merenlender 2003). Scott et al. (2001) indicated that nature reserves are most frequently found at higher elevations and on less productive soils whereas areas of lower elevation and more productive soils are most often privately owned and already extensively converted to urban and agricultural uses. Despite a minor shift in attention towards urban and suburban landscapes at the close of the 20th century, the rural landscape remains the focus of most wildlife management efforts in North America (Decker et al. 2001). Creating conservation plans only on public land is inadequate because not all landowners have a stewardship philosophy or experience in land management (James 2002). At the heart of this concern for conservation and management on private lands is the role that private lands play in providing key habitats for endangered and threatened species. More than one-half of listed species have 80 percent of their habitat on private land and the long term survival of most endangered species depends on our ability to prevent further losses and to increase their populations by restoring degraded habitats, often on private lands (Guide et al. 1997; Wilcove and Lee 2004).

Land-use practices on private lands have significant impacts on the future of wildlife in this country. Clearly, with nearly 70% of the conterminous United States held in private ownership and 50% managed as cropland, pastureland, or rangeland, successful partnerships between landowners and conservation interests are critically important to achieve wildlife goals (Heard et al. 2000). Everyday decisions made by private landowners affect the flora, soil, and fauna present on the lands they manage. Making a decision to actively improve wildlife habitat can be difficult for private landowners because any actions they take have potential costs and benefits and most owners of agricultural land view their land as a productive asset to provide at least some minimally accepted level of income (Decker et al. 2001 and Kraft et al. 2003). Government agricultural programs and policy have created a wide range of options available to farmers and ranchers in managing of their lands. Between 1996 and 2001, there were 32 federal conservation incentives programs, not including tax incentive measures (Hummon and Casey 2004).

Loss of biodiversity and declines in wildlife populations have been noted by natural resource professionals throughout much of the past century. Changes in federal policy and land use practices among farmers and ranchers have had important ramifications for wildlife in agriculturally dominated landscapes. Federal programs that favored shifts in native habitats to agricultural purposes have been attributed to drastic declines noted among grassland-dependent wildlife in the Great Plains. According to Dahlberg (1992), the legacy for agricultural goals, institutions, and policies in the twentieth century was a dramatic reduction in the abundance and diversity of native flora and fauna.

A variety of agricultural, environmental, social, political, and economic considerations led to the passage of the 1985 Food Security Act (Farm Bill). The inclusion of the conservation title to the 1985 Farm Bill (which established the Conservation Reserve Program) was a major asset to private land conservation. Additional benefits to wildlife and their habitats were brought about by amendments to the 1985 Farm Bill in 1990 and 1996. Improvements in legislation that were sought by wildlife conservation interests included the (1) creation of state technical committees, (2) establishment of an application review procedure that ranked applications based on their environmental benefits (e.g., proximity to wildlife habitat, diversity of seed mixture, use of native plants), and (3) recognition of coequal status of wildlife with soil and water conservation (Heard et al. 2000). In addition, new programs such as the Wetlands Reserve Program (WRP), Wildlife Habitat Incentives Program (WHIP), and Environmental Quality Incentives Program (EQIP) were added in hopes of further promoting wildlife habitat on private lands. Zhang and Flick (2001) found that the reforestation behavior of non-industrial private forest landowners is influenced negatively by environmental regulations and positively by public financial assistance programs. It also has been suggested that these and other incentive based conservation programs hold considerable promise as a means of engaging previously uninterested or hostile landowners in the cause of endangered species recovery (Wilcove and Lee 2004).

Conservation Reserve Program

The Conservation Reserve Program (CRP) is a voluntary conservation program available to agricultural landowners through the United States Department of

Agriculture's Farm Service Agency (FSA). Through CRP, landowners receive rental payments and cost-share assistance to establish resource-conserving vegetative covers on eligible farmland. The major objective of CRP is prevention of topsoil erosion and thereby safeguarding natural resources such as groundwater, streams, rivers, and lakes. Through the establishment of vegetative covers on agricultural landscapes, CRP also serves to provide critical habitat for wildlife. Ten and 15 year contract options are available for participants in CRP (U.S. Department of Agriculture, 2007).

Regarding Farm Bill contributions and benefits to wildlife habitat, the most information available is concerned with CRP, the oldest and largest (in cost and size) of the programs. Because birds are considered good indicators of ecosystem health and function, most CRP assessments are concerned with bird responses to CRP in the Midwest and Plains States. Information concerning wildlife responses to other Farm Bill programs is greatly limited. To gain a better understanding of the contributions of WRP, NRCS has reviewed studies pertaining to biological changes in restored wetlands. Information regarding contributions of WHIP is even more miniscule, and therefore limited to program description and identification of informational needs.

One of the major intended purposes of CRP is the provision of wildlife habitat. In the Southeast, agricultural lands enrolled in CRP have the potential to provide essential early successional habitat for regionally declining grassland and shrub-successional species (Heard et al. 2000). Throughout the southeastern United States, privately owned rural, agricultural, and forested lands constitute 79% of the total land base and provide important wildlife habitats. As of 1997, the southeastern landscape was comprised of 48.3% forest, 14.2% rowcrops, 11.4% pasture, 1% rangeland, 1% CRP, whereas other

rural uses accounted for the remaining 3.5% (USDA-FSA 2000). The past five decades have seen dramatic changes in land use in the Southeast. Based on the United States Department of Agriculture's National Resources Inventory (USDA-NRCS, NRI 1999) survey of 12 southeastern states (AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, VA, WV), from 1982-1997, 4.7% of the rural land base (3.9% of total surface acres) was lost to urbanization or other uses. Twenty percent of cropland (3.6% of total land base), 5.8% of pasture (0.7% total land base), and 29% of rangeland (0.4% of total land base) in these southeastern states were converted to nonagricultural uses, while forested acres remained relatively stable (0.8% loss of forested acres, 0.4% of total land base).

Although a significant majority of the 34 million acres enrolled in CRP are in the Great Plains and Midwestern States, the program also has had significant impacts in the Southeast. Following the 22nd CRP signup, almost 2.8 million acres were enrolled in CRP in 12 southeastern states (Heard et al. 2000). Unlike the Midwest where grass planting was the most common conservation practice, tree planting was the dominant practice in the Southeast, comprising 61.9% of total enrolled acres. Thus, CRP in the Southeast varies significantly with other regions due mostly to differences in land use patterns and conservation goals and objectives.

Wetlands Reserve Program

The Wetlands Reserve Program (WRP) is a voluntary conservation program available to private landowners through the Unites States Department of Agriculture's Natural Resources Conservation Service (NRCS). Through WRP, landowners receive financial and technical assistance to restore, protect, and enhance wetlands and wetland

features including wildlife habitat. Eligible landowners may select to enroll for a permanent easement, a 30-year easement, or a restoration cost-share agreement that runs for a minimum of ten years (U.S. Department of Agriculture, 2007).

Since WRP was authorized in 1990, landowner interest has resulted in enrollment of over 912,000 acres in permanent easements (76%), 30-year easements (18%), or 10-year cost-share agreements (6%) (Heard et al. 2000). In addition, approximately 500,000 acres have been offered for enrollment. Types of lands currently enrolled include: (1) former bottomland hardwood wetlands and riparian floodplain habitats (55%), (2) emergent wetland and open water complexes (15%), and (3) nonwetland buffer areas (30%). When Europeans arrived in North America, there were approximately 224 million acres of wetlands in the conterminous United States (Dahl 1990). By 1992, 45-50% of the original wetland area in this region had been converted to agricultural and other uses, with losses approaching 90% in some states (Heimlich et al. 1998). Gibbs (2000) reported that wetlands mosaics can absorb only modest losses and still retain wetland densities minimally sufficient to sustain the wetland biota. The primary objectives of WRP land include restoring hydrology, establishing hydrophytic vegetation, and maximizing wildlife habitat and other wetland functions in a cost effective manner. In the Lower Mississippi Alluvial Valley, WRP is seen as the major avenue to accomplishing the 521,000-acre bottomland hardwood wetland habitat restoration objective set by the North American Waterfowl Management Plan's Lower Mississippi Valley Joint Venture (Baxter et al. 1996).

Wildlife Habitat Incentives Program

The Wildlife Habitat Incentives Program (WHIP) is another voluntary conservation program available to private landowners through NRCS. Through WHIP, eligible landowners receive technical and cost-share assistance to create and protect high quality habitat for terrestrial and aquatic species on their properties. Working agreements between NRCS and enrolled landowners generally run for five to ten years. Unlike CRP and WRP, WHIP is not restricted to agricultural landscapes. A special emphasis is placed on enrolling habitats for wildlife species experiencing declining or significantly reduced populations, practices beneficial to fish and wildlife that may not otherwise be funded, and wildlife and fishery habitats identified by local and state partners and Indian tribes in each state (U.S. Department of Agriculture, 2004).

Although the least amount of information regarding wildlife benefits is available for WHIP, it is nonetheless held in high regard among landowners and resource professionals. The primary objective of the program is to create high quality wildlife habitats that support wildlife populations of national, state, tribal, and local significance. Of the $50 million available for WHIP in 1998 and 1999, $30 million was distributed to states for financial and technical assistance in 1998 and $20 million in 1999. This resulted in 4,600 projects affecting 672,000 acres in 1998 and 3,855 projects on 721,249 acres in 1999 (Heard et al. 2000). The $10,000 limit on WHIP posed a challenge to states when considering significant goals for wildlife. However, despite the program's ambitious goals and limited funding, states were successful identifying specific management issues (mainly concerning the restoration of a variety of wildlife habitat types) and enlisting landowners' participation in addressing them (Burke 1999). WHIP

has since grown in size and cost, and for fiscal year 2006 between 750,000 and 1,000,000 dollars were allocated to the NRCS State Office in Mississippi for program operation.

Despite the broad attention given to the ecological impacts and benefits of these and other cost-share programs in the scientific literature (Baron et al., 2002; Dunn et al., 1993; Ryan et al., 1998), research regarding the social impacts and benefits gained by participating landowners is lacking. It is important for natural resource agencies (within and outside of Mississippi) to have an awareness of reasons why landowners participate in cost-share programs, how satisfied they are with their particular program, and what problems they encounter while participating to satisfy their clients and boost participation. It is only by maintaining high satisfaction levels and participation rates among landowners that the desired outcomes and objectives of cost-share programs (e.g., erosion control, creation of high-quality wildlife habitat) can be achieved. It also is important for natural resource agencies within specific areas to have a thorough knowledge of their program clientele because the variables influencing landowner participation in cost-share programs may differ depending on the state where the landowner resides and the particular program in question (Onianwa et al. 2004).

My research was designed to determine motivations, satisfaction levels, and problems encountered by landowners enrolled in CRP, WRP, and WHIP within Mississippi and to compare their responses with those of natural resource professionals within Mississippi who work to implement and oversee program practices. CRP was chosen because it is the largest (in terms of size and cost) of the federal cost-share programs. The inclusion of the conservation title to the 1985 Farm Bill led to the establishment of CRP. WRP was selected because of its growing popularity in the

Mississippi Delta region. WHIP, a smaller program in terms of size and cost, was selected because of its objectives of promoting wildlife habitat improvement and protection on private lands. Communication with natural resource professionals in Mississippi and Alabama supported my selection of these three target programs.

Objectives

The primary objectives of my thesis were to:

(1) Determine landowner participation rates in federal, state, and non-governmental cost-share programs.

(2) Determine reasons landowners participate in cost-share programs.

(3) Determine satisfaction levels of landowners who receive cost-share assistance.

(4) Determine if sponsoring agencies measure the effectiveness of recommended management practices conducted on properties enrolled in cost-share assistance programs.

(5) Determine if problems exist in the implementation of conservation management practices on program enrolled lands, such as landowner compliance, lack of agency consultation with landowners enrolled, or lack of habitat management knowledge among agency staff who consult landowner participants.

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CHAPTER II

MISSISSIPPI PRIVATE LANDOWNER MOTIVATIONS, SATISFACTION, AND PROBLEMS ENCOUNTERED WITH THREE COST-SHARE PROGRAMS

Introduction

Cost-share assistance programs are designed to meet a wide variety of personal goals and needs held by private landowners, including but not limited to: earning additional income, maintaining ownership of land, reducing erosion, and improving habitat for wildlife. Many programs, such as CRP and WRP are geared towards specific land types in the hopes of attracting and targeting a broad spectrum of private landowners. An important need behind the design and enhancement of these programs is to understand the attitudes, motivations, satisfaction levels, and other factors that determine landowners' willingness to participate or desire to continue participation in cost-share programs.

Based on earlier investigations, the variables influencing landowner participation in government-sponsored conservation programs may differ depending on the state where the landowner resides and the particular program in question (Onianwa et al. 2004). In addition, Rilla et al (2000) found that owners of farmland in California are motivated by a combination of short-term and long-term reasons to sell easements on their properties. In a study of private landowner attitudes in North Carolina, Daley et al. (2002) found that differences in population subsets warrant tailored approaches to wildlife programming

and that regional differences occurred among most of the variables examined. A critical challenge faced by overseeing agencies is tailoring programs to meet the diverse needs and goals of private landowners.

In looking specifically at the Conservation Reserve Program (CRP), Miller and Bromley (1989) measured the interest of CRP participants in Virginia and Iowa regarding the improvement of wildlife habitat on their retired lands. Seventy-two percent of CRP participants in Virginia and 73.5% of Iowa participants indicated an interest in improving wildlife habitat. When questioned regarding reasons for wanting to improve habitat on their land, the most important reasons included: seeing and/or viewing wildlife (23%), hunting opportunities for self (21%), and wildlife values for future (18%). Those participants who did not indicate an interest in improving wildlife habitat were asked for reasons regarding their lack of interest. Most participants in this group (43%) indicated they wanted to avoid attracting unwanted hunters where as the next highest reason (16%) was lack of money to spend on wildlife habitat.

A variety of studies have been conducted to determine which characteristics of landowners and the properties they manage most determine their willingness to participate in cost-share programs. Langpap (2004) found that in general, among private forest owners in western Oregon and Washington, those who are younger, have acquired their property more recently, own more woodland, and are interested in conservation and providing wildlife habitat on their forests are more likely to participate. Onianwa et al. (2004) reported college education, age, ratio of owned to total acres, rented acres, gross value of sales, and membership in a conservation organization as significant predictors of participation by limited resource farmers in agricultural cost-share programs in Alabama.

Specifically, participants with college degrees were reported to have a 4% greater probability of participating. Each unit increase in age and proportion of owned acres resulted in respective increases of 0.2 and 7.7% in the probability of participation. These results are consistent with those found by Nagubadi et al (1996), who found that age, a measure of experience, has a positive influence on a private forest owners' decision to participate in a forestry cost-share program and that owners with more education are expected to have more ability to understand the benefits associated with participation.

Kraft et al. (1996) examined factors influencing farmers' willingness to participate in the Water Quality Incentive Program (WQIP) throughout the U.S. Cornbelt region (Illinois, Iowa, Indiana, northern Missouri, and southern Wisconsin). Results from a logistic analysis of factors affecting farmers' willingness or unwillingness to participate indicated five statistically significant variables: (1) Farmers with a negative attitude toward governmental involvement with wetland regulations were less likely to want to participate in WQIP, (2) Farmers with more education were more likely to want to participate, (3) Farmers who were owners were less likely to participate than were farmers who rented their land, (4) Farmers having more contact with the Natural Resources Conservation Service (NRCS) during the year preceding the survey were more likely to want to participate, and (5) Farmers deriving a large percentage of their gross farm sales from specialty crops were more likely to want to participate. The results of this study however were not very encouraging. Less than half of the farmers or farmland owners indicated any interest in WQIP, and those that indicated interest wanted an average incentive payment almost four times greater than those currently being offered through WQIP.

McLean-Meyinsse (1994) examined Louisiana small farmers' reasons for not participating in CRP, their awareness of the program, and their willingness to participate in the program. The results from this study indicated that farmers do not participate in the program if revenues from cropland are an important source of income, or if they are tenants. The more educated and greater income farmers seemed to have a greater awareness of CRP than other respondents. Willingness to participate was positively influenced by payment per acre, age, and farm status where as participation occurred if payments per acre were comparable to the opportunity costs of removing cropland from production. A critical finding is this study was that even though this study was conducted almost four years after CRP was authorized, only 56% of the respondents were aware that the program existed.

Many studies also have been conducted to examine the various motivations and expectations of landowners who participate in cost-share programs and conservation easements. Rilla et al. (2000) found that preservation for continued farming or open space was the leading motivation with cash often seen as a mechanism for preserving family goals among conservation easement holders in northern California. Marshall et al. (2003) found similar results among Colorado landowners where maintaining agricultural use and improved estate tax liability were the most desired overall goals of conservation easements holders. Attachment to their land and desire to preserve it for future generations were key components in the desire to be good stewards of the land among farmers in a typical Mid-western watershed in Michigan (Ryan et al. 2003). Results from this study revealed that farmers were more intrinsically motivated to practice conservation than extrinsically motivated by economics. Forshay et al. (2005) found that

protection of the environment, economic incentives, and recreational opportunities were the primary reasons for enrollment among WRP participants in a three-county region of Wisconsin.

Most research on the social effects of cost-share and conservation programs has indicated overall high levels of satisfaction among participants. Among WRP participants in Wisconsin, Forshay et al. (2005) found that 70% of program participants were satisfied with their program arrangement and 89% planned to maintain their projects. However, a few changes were recommended by survey participants, including a reduction in the tax rate of land enrolled in WRP, approval for permanent deer stands, and increased communication with WRP officials during the restoration. Rilla (2002) found that most owners of easement-restricted farms in northern California were enthusiastic sellers of the easements and when asked about the effectiveness and impact of the program's public goals (slowing urbanization and preserving farmland), most (83%) stated that the programs were successful. Rilla et al. (2000) found that while landowners in northern California had overall very positive views of their easement-related experiences; a few did identify particular problems concerning the annual monitoring of uses on their parcels or specific deed restrictions including limits on additional housing.

Vandever et al. (2002) found that CRP participants from USDA Farm Production regions throughout the U.S. experienced positive and negative impacts while participating. Regarding specific benefits, control of soil erosion was sighted as the most important benefit (85%). Sixty percent of respondents reported the opportunity to see and experience wildlife as an important benefit of CRP while improvements in water quality (39%) and air quality (29%) were cited as important environmental benefits. Regarding

specific problems or negative impacts associated with CRP, 29% of respondents viewed the program as a source of weeds. Nineteen percent reported CRP to be a potential fire hazard to their farm and 18% indicated that an increase in unwanted requests for hunting permission had occurred due to their participation in CRP.

In considering motivations, satisfaction levels, and problems encountered among private landowners enrolled in cost-share programs, these characteristics must be examined for landowners in Mississippi to determine the best ways to market and implement programs on privately-owned land within the state. This type of information also is important for agencies to have to determine if any changes to a program's design and implementation are needed to boost participation rates. The opinions and attitudes of landowners within Mississippi may or may not be similar to those of landowners living in other states and/or regions within the U.S that have been documented. Therefore, the following research hypotheses are proposed.

H_1: Monitoring of habitat conservation practices performed on enrolled properties is conducted by local resource agency personnel.

H_2: Landowners who enroll properties in cost-share programs are not likely to be motivated to participate in fee access wildlife recreation.

H_3: There is not a significant difference in the percentage of enrolled landowners interested (or participating) in fee access wildlife recreation among CRP, WRP, and WHIP.

H_4: Landowners do experience problems in securing a cost-share agreement to enroll land in cost-share programs.

H_5: Private landowners who participate in cost-share programs are satisfied with their program arrangement.

H_6: There is not a significant difference in the overall satisfaction levels among enrolled landowners in CRP, WRP, and WHIP.

Methods

I collected landowner responses from the 2006 Survey of Mississippi Landowners Concerning Cost-Share Assistance Programs for Wildlife conducted for the Natural Resources Enterprises Program in the Department of Wildlife and Fisheries at Mississippi State University (Appendix A). The sampling frame consisted of Mississippi landowners selected from a database maintained by the Department of Forestry based on county land tax records. The database contained information for 79 counties within Mississippi about land ownership (i.e., landowner name and address) and land type (i.e., cultivated, non-cultivated). My research project was reviewed and approved by the Mississippi State University Institutional Review Board (IRB) for the Protection of Human Subjects (Docket 06-190).

I included only certain counties within the state in the final sample. Careful consideration was made to not include the coastal counties of Hancock, Harrison, Jackson, Pearl River, Stone, or George due to the recent devastating effects of Hurricane Katrina. From records obtained through the Farm Service Agency (FSA) regarding total number of CRP contracts and total CRP acreage enrollments for all program years (1991-2007), I selected only those counties with more than 10,000 acres enrolled in CRP for inclusion in my study. I also reviewed records kept by NRCS regarding statewide WRP easement locations as of February 2005. All counties with reported WRP easements were initially considered, however among those with three or fewer reported easements, I selected only those with 5,000 or more acres enrolled in CRP for inclusion in the final sample. After these measures, I selected 43 counties within Mississippi for sampling. The

counties selected were largely concentrated in the Yazoo Delta and northeastern regions of Mississippi.

From the county land tax records, I sorted each of the 43 county's landowner data based on amount of cultivated acres owned. I then selected only those landowners from each county who owned more than 250 acres in cultivated land. From this sampling frame, I selected a random sample of 2,000 landowners to receive a mail questionnaire.

The 2006 Survey of Mississippi Landowners Concerning Cost-Share Assistance Programs for Wildlife consisted of an 11-page, self-administered mail questionnaire designed to collect information on the objectives of this thesis as well as other environmental, social, and economic information beyond the scope of this thesis. The questionnaire mostly dealt with questions concerning: (1) reasons landowners chose to enroll property in a cost-share assistance program, (2) landowners' overall satisfaction with their program arrangement, (3) problems landowners faced either during the enrollment process or while implementing program practices on their land, and (4) demographics of respondents. Prior to the initial mail out, the questionnaire was pre-tested and reviewed by selected district conservationists in Alabama and Mississippi and faculty within the Department of Wildlife and Fisheries at Mississippi State University. After this review, a few items were re-worded in hopes of making the questionnaire more readable for all respondents, and a few typographical errors were addressed. I used the Tailored Design Method (TDM) developed by Dillman (2000) as a reference guide for survey design and mailing procedures. I sent five mailings, as necessary depending on if there was a response, to private landowners between August and November 2006. I included a cover letter in each mailing that explained the importance and objectives of the

survey, the importance of landowner participation, the confidential nature of responses, and contact numbers in case the landowner had any questions regarding the survey or human participation in social research. In addition, I used a postage-paid business reply envelope to facilitate returns. I personalized each envelope and letter using the merge function in Microsoft Word. I printed each landowner's name and address directly on the letters and envelopes to simulate a first class mailing. I numbered all of the questionnaires using a bar code system printed on clear adhesive labels.

When questionnaires were returned to Mississippi State University, I scanned the bar codes and changed the respondent's status in the mailing list to remove the possibility of further mailings. I coded data from useable questionnaires, and entered them into a Microsoft Access database using a data entry screen identical to the questionnaire. This data base had built in codes to warn if erroneous values were entered to further reduce input errors. I then transferred data to a SAS Version 9.1 (SAS Institute., 2003) data set. Because no telephone or email contact information was included in the landowner database, I did not contact individuals who failed to complete the mail questionnaire for a non-response survey.

The 2006 Survey of Mississippi Landowners Concerning Cost-Share Assistance Programs for Wildlife was divided into three sections based on the landowner's status as a participant in one of the three target cost-share programs (CRP, WRP, and WHIP), a participant in another cost-share program not selected for emphasis in this study, or a non-participant in any cost-share program. I sought information on the demographic characteristics of all landowners across the three categories. In this section, located at the end of the survey, I asked questions regarding age, gender, approximate household

income before taxes, highest educational level attained, ethnic background, and if the survey was completed by the person to whom it was addressed. In addition, I left one and one-half blank pages available at the end of the survey to allow respondents the opportunity to openly share anything with NRCS or FSA or to voice any further thoughts, concerns, or suggestions regarding cost-share assistance programs in Mississippi.

Most of the survey sought information from landowners enrolled in CRP, WRP, or WHIP. I calculated frequencies and total numbers of landowners enrolled for each of the three programs. I first asked landowners in this target group to report the total number of acres enrolled per county for each program where they were a participant and the specific year when their land was enrolled. In the event that a landowner was a participant in more than one of these programs, I instructed them to answer the remaining questions based on the program they had been enrolled in the longest.

The second set of questions in this category covered whether management practices implemented on enrolled acreages were inspected by agency staff (answers were coded 1=Yes and 2=No), how the respondent's role/involvement in the program could best be described and what type of land was enrolled in the program. I performed a 95% confidence interval to determine if the percentage of landowners who reported that no monitoring occurred varied significantly from zero within the three programs. I conducted Fisher's Exact Test for independence using PROC FREQ with the FISHER option in SAS v. 9.1 (SAS Institute., 2003) to determine if any significant differences occurred in the levels of inspection reported among CRP, WRP, and WHIP participants. I used alpha = 0.05 for significance testing throughout my study.

To determine the respondent's role/involvement in the program, I asked the respondents to indicate from a list of four items which one most accurately described their involvement. This list included: "landowner/operator, actively involved in farming," "landowner, but not actively involved in farming," "renter and operator, actively involved in farming," and "trustee." I calculated frequencies and total number of responses for each of these items. To determine the specific type of land enrolled, I asked participants to indicate from a list of seven items which one most accurately described their land prior to enrollment. This list included: "mostly nonnative grasses (e.g., crabgrass, fescue)," "mostly native grasses (e.g., bluestem, sedge)," "mostly trees," "mostly non-grass cropland," "mostly wet areas without crops," "mostly wet areas with crops (e.g., rice, millet)," and "other" with a request for specification. I calculated frequencies and total number responses for each item.

In the third section, I asked participating landowners a series of questions concerning: (1) reasons why they chose to enroll in the cost-share program, (2) if their goals regarding their reasons for enrolling were met, (3) what problems they experienced either while implementing program practices on their land or during enrollment, and (4) overall difficulty and satisfaction levels with participation in cost-share programs. To determine reasons why landowners participated in one of the three target programs, I asked respondents to indicate how important each of 13 items was in their decision to participate in their respective program on a 5-point importance continuum. Response format was 1=not at all important, 2=slightly important, 3=moderately important, 4=very important, and 5=extremely important. I asked participants if they wanted "to establish an additional source of income," "to increase wildlife on property," "to increase hunting

opportunities for self/family," "to increase hunting opportunities for leasing purposes," "to be a good steward of the land," "to restore land to pre-agricultural condition," "to maintain ownership of land," "to be allowed to continue farming," "to lower land management costs," "to increase aesthetic appeal of the property," "to control erosion," "to improve water quality," and "to reduce dust due to bare ground." I calculated frequencies and mean responses for all items. From this point forward these items are referred to as importance items. I calculated mean responses for questions with ordinal data throughout my study for ease of table interpretation.

I focused special attention on the item regarding hunting opportunities for leasing purposes. I computed a 95% confidence interval to determine if the percentage of respondents who indicated they were not interested in hunting opportunities for leasing purposes varied significantly from zero. I performed this step for all respondents as a group and after I divided respondents into three groups based on their particular program. Because my data were ordinal, I conducted a Kruskal-Wallis test using PROC NPAR1WAY with the EXACT WILCOXON option in SAS v. 9.1 (SAS Institute., 2003) to determine if there was a significant difference among CRP, WRP, and WHIP participants interested (or participating) in hunting opportunities for leasing purposes.

After completing the importance items, I asked participants the extent to which they agreed or disagreed with how effective their respective cost-share program had been in addressing the importance items on a 5-point, Likert-type scale. This question included the items: "I have established an additional source of income," "I have increased wildlife on property," "I have increased hunting opportunities for self/family," "I have increased hunting opportunities for leasing purposes," "I believe I have become a better steward of

the land," "I have restored land to pre-agricultural condition," "I have maintained ownership of my land," "I have been able to maintain farming practices on my land," "I have seen a decrease in my land management costs," "I have increased aesthetic appeal of the property," "I have seen a reduction in erosion," "I have seen improvements in water quality," and "I have seen a reduction in dust due to bare ground." Response format was 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. From this point forward these items are referred to as performance items. I calculated frequencies and mean responses for all items.

I calculated "gap scores" for importance/performance items based on expectancy disconfirmation theory. According to the expectancy disconfirmation paradigm, perceived service quality is viewed as the degree and direction of discrepancy between consumers' perceptions and expectations (Parasuraman et al. 1988). Thus, I subtracted a measure of item importance from a measure of item performance to derive a gap score for each variable related to motivations for participating in a cost-share program (Performance – Importance = Gap Score). I classified gap scores as either positive disconfirmation, confirmation, or negative disconfirmation. According to the expectancy disconfirmation paradigm, negative disconfirmation occurs when performance is less than expectations, confirmation occurs when performance is equal to expectations, and positive disconfirmation occurs when performance is greater than expectations (Burns et al. 2003). Although importance-performance analysis may offer advantages for evaluating consumer acceptance of a marketing program, gap scores are useful in tracking trend data regarding visitor (consumer) expectations over time (Burns et al. 2003). Because measurement scales were ordinal, I used Spearman's rho (Schlotzhauer

and Littell 1997) to determine which performance items correlated greatest with an overall evaluation of satisfaction with the cost-share program arrangement by conducting PROC CORR with the SPEARMAN option in SAS v. 9.1 (SAS Institute., 2003).

I also asked program participants to report any problems encountered either during the enrollment process or while implementing program practices on their land. Regarding problems on their land, I provided landowners with a list of 9 possible negative impacts and asked them to indicate any that they encountered. This list included: "too much cropland taken out of production," "negative effects on local economy," "attracts unwanted wildlife," "attracts unwanted requests for permission to hunt," "source of weeds," "potential fire hazard," "makes farm appear unkempt or poorly managed," "causes problems with neighbors," and "no negative effects have been observed." I calculated frequencies and total number of responses for each item.

To determine possible issues in the enrollment process, I asked participants to indicate the extent to which they agreed or disagreed with six items on a five-point, Likert-type scale. These items included: "eligibility requirements were too strict," "there was a lack of communication between me and agency personnel," "inadequate information sources were available," "the application process was too complex," "there was a lack of agency personnel available to assist me," "management practices for me to undertake were unclear," and "other" with a request for specification. Response format was 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. I calculated frequencies and mean responses for all items. I computed 95% confidence intervals to determine if the percentage of landowners who agreed or strongly agreed with each item differed statistically from zero (all six items were tested individually).

To determine landowners' overall satisfaction with their cost-share program arrangement, I asked participants to indicate their satisfaction level on a 5-point Likert-type scale. Response format was 1=not at all satisfied, 2=slightly satisfied, 3=moderately satisfied, 4=very satisfied, and 5=extremely satisfied. I asked respondents to indicate their overall level of difficulty with the process of participation. Response format was 1=not at all difficult, 2=slightly difficult, 3=moderately difficult, 4=very difficult, and 5=extremely difficult. I calculated frequencies and mean responses for both items. I then divided the respondents into three groups based on which program they were enrolled in (CRP, WRP, or WHIP) and calculated frequencies and mean responses regarding overall satisfaction in the same manner as above. To determine if there were any significant differences in overall satisfaction reported among the three groups regarding their particular program arrangement, I performed a Kruskal-Wallis Test using PROC NPAR1WAY with the EXACT WILCOXON option in SAS v. 9.1 (SAS Institute., 2003).

Next, I asked landowners participating in one of the three programs if they would enroll more property if given the opportunity, and if they would encourage other landowners to participate in their respective program (answers were coded 1=Yes and 2=No for both items). Finally, I asked how effective they believed certain measures would be in encouraging other landowners to participate in cost-share programs on a 5-point effectiveness continuum. These measures included: "more money/acre," "more technical assistance," "more enrollment options," "longer contract duration," "longer sign-up period," "more interaction between landowner and agency personnel," "making programs more simple to understand," "increased publicity/marketing of available

programs," and "other" with a request for specification. Response format was 1=not at all effective, 2=slightly effective, 3=moderately effective, 4=very effective, and 5=extremely effective. I calculated frequencies and mean responses for each item.

The second group of landowners involved in my study consisted of those who were not enrolled in one of the three target programs, but were enrolled in another cost-share program not selected for emphasis in this study. If a landowner was not a participant in CRP, WRP, or WHIP, they were next given a list of other available cost-share programs and asked if they were a participant. This list included the Conservation of Private Grazing Lands Program (CPGLP), Conservation Security Program (CSP), Emergency Watershed Protection Program (EWPP), Environmental Quality Incentives Program (EQIP), Farm and Ranch Lands Protection Program (FRLPP), Forestry Incentives Program (FIP), Grassland Reserve Program (GRP), Ground and Surface Water Conservation Program (GSWCP), Healthy Forests Reserve Program (HFRP), and Stewardship Incentives Program (SIP). If a landowner indicated they were a participant in any of these, I referred them to the end of the survey to solicit demographic information and allowed them the opportunity to voice any open-ended suggestions or concerns. I solicited no further information from this group.

The third and final group of landowners involved in my study consisted of those landowners who were not a participant in a cost-share program. I first asked landowners in this category if they were familiar with cost-share assistance programs that are available to landowners through natural resource agencies. Answers were coded as 1=Yes and 2=No. If they answered Yes, I asked them the extent to which they agreed or disagreed with 9 items regarding reasons as to why they were not participants in a cost-

share program on a five-point, Likert-type scale. These items included: “cost-share programs do not offer enough financial incentive,” “I expect to earn more growing crops on my land,” “I believe control over my land would be lost,” “I do not want the hassle of working with federal government on cost-share acres,” “long-term easements on cost-share acres are troublesome,” “I do not want future owners (heirs) to have to deal with program practices,” “I have goals that are different from those of the cost-share program,” “I do not know enough about cost-share assistance programs,” “pre-application complex is too complex,” and “other” with a request for specification. Response format was 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. I calculated frequencies and mean responses for each item. I then asked the respondents to indicate (from the listed options in the question mentioned above) the single most important reason in their decision not to enroll.

I lastly asked these same landowners if they believed there was any possibility of them attempting to enroll in the future (answers were coded 1=Yes, 2=No). If they answered No to the question asking if they were familiar with cost-share assistance programs available to landowners, I asked if they had any interest in learning more about cost-share programs and if they would like to have information sent to them in the mail. Responses to these questions were coded as 1=Yes and 2=No.

Results

Of the 2,000 individuals sampled, 802 (45.2%) landowners provided responses. Of the total respondents, 667 returned usable questionnaires; the remaining 135 individuals were non-eligible because they were deceased (n = 52), or they refused to participate in the survey (n = 83). An additional 219 surveys were returned as non-deliverable. Thus, the overall effective mailing response rate was 37.5%.

I solicited demographic information from all survey participants across the three landowner categories. Most respondents were "White or Anglo" (98.33%, n = 648) and male (82.05%, n = 544), with an average age of 63.5 (n = 663, SE = 0.5,) years. Most respondents also reported a gross annual household income of "$200,000 and above" (18.01%, n = 107) and 77.54% (n = 511) had some college or graduate level education.

A total of 314 respondents (47%) participated in CRP, WRP, or WHIP. In the event that a landowner was a participant in more than one of these programs, they were classified according to which program they had been enrolled in the longest. After these measures, reported enrollments for the three programs were: 83% (n = 260) in CRP, 9% (n = 30) in WRP and 8% (n = 24) in WHIP (Table 2.1).

Most program participants (85%, n = 239) reported that management practices implemented on their enrolled acreages had been inspected by agency staff (Table 2.2). Based on Fisher's Exact Test for independence, I found that the level of monitoring reported among participants in CRP ("yes" = 200, "no" = 35, n = 235), WRP ("yes" = 20, "no" = 5, n = 25), and WHIP ("yes" = 19, "no" = 1, n = 20) was independent of the particular program they were enrolled in at the 5% significance level, indicating no significant relationship between the specific program and the level of monitoring reported

($P = 0.419$, $df = 2$). Based on the 95% confidence interval, I found that the percentage of landowners who indicated no monitoring was occurring did not differ significantly from zero for WHIP participants but differed significantly from zero for the other groups. Thus, I rejected my hypothesis that monitoring of habitat conservation practices performed on enrolled properties is conducted by local resource agency personnel. Regarding involvement in their particular program, most respondents indicated they were landowners either not actively involved in farming (49.14%, $n = 143$) or actively involved in farming (48.80%, $n = 142$) (Table 2.3). Most respondents (52.43%, $n = 151$) indicated "Non-grass cropland" when questioned about their particular land type prior to enrollment (Table 2.4).

Program participants indicated how important each of 13 items (importance items) was in their decision to participate in their respective program (Table 2.5). Over 50% of landowners rated "to do my part in being a good steward of the land" (73.68%), "to increase wildlife on property" (71.70%), "to control erosion" (62.21%), "to increase hunting opportunities for self/family" (60.15%), and "to establish an additional source of income" (59.33%) as very to extremely important. Most landowners rated "to increase hunting opportunities for leasing purposes" (70.90%), "to allow me to continue farming my land" (66.40%), and "to reduce dust due to bare ground" (61.54%) as not at all or only slightly important to them as a reason to participate.

Based on the 95% confidence interval, I found that the percentage of landowners who indicated it was "not at all important" to increase hunting opportunities for leasing purposes (56.6%) was significantly different from zero. Thus, I accepted my hypothesis that landowners who enroll properties in cost-share programs are not strongly motivated

to participate in fee access wildlife recreation; it was the lowest ranked of all items in the scale (Table 2.5). Based on the Kruskal-Wallis test, I found that there was not a significant difference among CRP, WRP, and WHIP participants interested in fee access wildlife recreation at the 5% significance level ($X^2 = 1.120$, $P = 0.571$). Thus, I accepted my hypothesis that there is not a significant difference in the level of interest regarding fee access wildlife recreation among the three groups.

Respondents also indicated how each of the importance items performed regarding their expectations (Table 2.6). Most cost-share participants agreed or strongly agreed that "I have become a better steward of the land" (86.96%), "I have increased wildlife on property" (84.55%), "I have increased hunting opportunities for self/family" (78.80%), "I have maintained ownership of my land" (75.49%), "I have seen a reduction in erosion" (75.10%), "I have increased the aesthetic appeal of the property" (68.16%), "I have established an additional source of income" (67.84%), "I have seen improvements in water quality" (64.25%) and "I have restored land to pre-agricultural condition" (62.60%).

Positive disconfirmation (actual performance exceeding expectations) occurred on all 13 items related to performance of the cost-share assistance programs (Table 2.7). Positive disconfirmation was greatest for items related to the reduction of dust due to bare ground or the maintaining of land ownership and farming practices. Positive disconfirmation was least for items related to establishing additional income and being a good land steward.

Respondents also indicated what (if any) problems they encountered either while implementing program practices on their land or during the process of enrolling in their

cost-share assistance program. Most respondents (54.78%, *n* = 172) reported that "no negative effects had been observed" on their land as a result of enrolling in their program, however, 10.19% (*n* = 32) reported "potential fire hazard" as a negative land impact and 8.92% (*n* = 28) reported "source of weeds" (Table 2.8). For the items related to enrollment issues, I found that most respondents strongly disagreed or disagreed that "there was a lack of agency personnel available to assist me" (78.57%), "there was a lack of communication between me and agency personnel" (64.82%), "management practices for me to undertake were unclear" (62.99%), "inadequate information sources were available" (62.75%), and "the application process was too complex" (55.74%) (Table 2.9). I also calculated rank scores for items related to enrollment issues by combining the percentages of landowners who indicated "agree" or "strongly agree" with each item. Based on the 95% confidence intervals performed on each enrollment issue, I found that percentage of landowners who reported "agree" or "strongly agree" differed significantly from zero for all items. Thus, I accepted my hypothesis that landowners experience problems in securing a cost-share agreement to enroll land in a cost-share program.

Overall, participants in the three target programs were satisfied with their cost-share assistance program arrangement. Most of the participants (64%, *n* = 173) were very or extremely satisfied with their program arrangement, about 28% (*n* = 75) were moderately satisfied, and about 8% (*n* = 22) were only slightly or not at all satisfied (Table 2.10). When I divided the landowners into three groups based on which program they were a participant in, the participants still indicated high levels of overall satisfaction with their program (Table 2.10). Among CRP participants, most (68%, *n* = 154) were

very or extremely satisfied, about 24% (n = 55) were moderately satisfied, and about 7% (n = 16) were only slightly or not at all satisfied. Among WRP participants, most (48%, n = 12) were moderately satisfied, 40% (n = 10) were either very or extremely satisfied, whereas 12% (n = 3) were not at all satisfied. Among WHIP participants, most (45%, n = 9) were very or extremely satisfied, 40% (n = 8) were moderately satisfied, and 15% (n = 3) were only slightly satisfied. Thus, I accepted my hypothesis that most private landowners who participate in cost-share programs have overall high satisfaction ratings with their program arrangement. Based on the Kruskal-Wallis test, I found that there was not a significant difference in the overall satisfaction level among enrolled landowners in CRP, WRP, and WHIP at the 5% level (X^2 = 5.576, P = 0.061). Thus, I accepted my hypothesis that there was not a significant difference in the overall satisfaction levels among the three groups. Across the three groups, only 3% (n = 8) of participants reported the process of participating in a cost-share program to be very or extremely difficult, about 17% (n = 44) reported the process to be moderately difficult and about 80% (n = 214) reported the process to be only slightly or not at all difficult (Table 2.11).

When I correlated performance items with overall satisfaction with the cost-share assistance program arrangement, 11 items (85%) were related significantly ($0.001 \leq P \leq 0.013$, $0.161 \leq \text{rho} \leq 0.315$). I found correlations with items: I "believe I have become a better steward of the land" (n = 246, rho = 0.315, $P < 0.001$), "have increased aesthetic appeal of the property" (n = 241, rho = 0.295, $P < 0.001$), "have restored land to pre-agricultural condition" (n = 243, rho = 0.291, $P < 0.001$), "have seen a reduction in erosion" (n = 248, rho = 0.265, $P < 0.001$), "have maintained ownership of my land" (n = 246, rho = 0.246, $P < 0.001$), "have established an additional source of income" (n = 248,

rho = 0.246, $P < 0.001$), "have seen improvements in water quality" ($n = 242$, rho = 0.234, $P < 0.001$), "have seen a reduction in dust due to bare ground" ($n = 239$, rho = 0.191, $P = 0.003$), "have increased wildlife on property" ($n = 252$, rho = 0.187, $P = 0.003$), "have been able to maintain farming practices on my land" ($n = 238$, rho = 0.165, $P = 0.011$), and "have seen a decrease in my land management costs" ($n = 241$, rho = 0.161, $P = 0.013$) (Table 2.12).

When questioned about future activities, most participants (79%, $n = 223$) indicated they would enroll more of their property in their respective program if given the opportunity. Most participants (91%, $n = 262$) also said they would encourage other landowners to participate in their respective program. When asked to indicate the effectiveness of various incentives for increasing or encouraging more participation in cost-share programs, most participants believed that "more money/acre" (83.76%), "more enrollment options" (64.53%), "longer contract duration" (57.04%), and "making programs more simple to understand" (51.51%) would be very or extremely effective (Table 2.13).

For landowners who were enrolled in another cost-share program not selected for emphasis in this study ($n = 83$), I found that most were enrolled in EQIP (36%, $n = 30$). FIP (23%, $n = 19$), and GSWC (18%, $n = 15$) had the next greatest enrollments among this group. I included this group in the overall demographic data but did not ask any specific questions regarding their particular program(s).

Concerning landowners who were not enrolled in a cost-share program ($n = 322$), most (82%, $n = 264$) were not familiar with cost-share programs available to landowners but 66% ($n = 195$) answered "Yes" when asked if they were interested in learning more

about cost-share programs for wildlife. In addition, 208 (82%) respondents in this group answered "Yes" when asked if they would allow program information to be mailed to them. When those who were familiar with cost-share programs were asked for reasons as to why they were not participants, over 50% agreed or strongly agreed that "cost-share programs do not offer enough financial incentive" (52.57%), and "I expect to earn more growing crops on my land" (51.10%) (Table 2.14). Most landowners 82% (n = 153) in this category indicated there was a possibility that they would enroll or attempt to enroll in the future.

Discussion and Implications

Based on the overall satisfaction measures, private landowners within Mississippi in my study indicated high levels of satisfaction with cost-share programs. In addition, results from the gap score analysis indicate that landowner expectations were exceeded for all items related to motivations for participating. These findings are consistent with my hypothesis and with the general trend found in the scientific literature regarding landowner satisfaction with cost-share and conservation programs (Rilla et al. 2000; Forshay et al. 2005). These findings suggest that while resource agencies may want to make some changes to improve the actual marketing and implementation of cost-share programs, such changes should be minimal and not compromise the overall system that landowners appear to be pleased with. These findings also will be important to natural resource agencies in marketing of these programs to landowners and especially in attempts to attract more potential clients who may have certain doubts about their needs being met through a cost-share program. The results also supported my expectation that

there is not a significant difference in the overall satisfaction levels among landowners in CRP, WRP, and WHIP regarding their respective program.

Because program participants in my study indicated that "more money/acre" would be the most effective way to encourage other landowners to participate whereas non-participants indicated "cost-share programs do not offer enough financial incentive" and "I expect to earn more growing crops on my land" as the biggest reasons for not participating, NRCS and other natural resource agencies may want to examine ways to increase annual payments made to program participants. Program participants indicated "more enrollment options" as the second most effective way to encourage landowner participation in cost-share programs, therefore NRCS also may want to try and broaden the enrollment options (more contract length options, more payment plan options, different species or habitat focus) available to landowners through the programs they administer in hopes of boosting landowner participation.

Landowner reasons and motivations for enrolling property in a cost-share program were largely centered on their desire to be a good steward of the land and the desire to increase wildlife on property. These results are generally consistent with those found in the literature regarding issues that are important to landowners who choose to participate (Miller and Bromley 1989). However, the literature on importance items and/or motivations also reveals some inconsistencies with my findings. I found that a landowner's desire to continue farming their land was of relatively low importance, whereas several other studies (Rilla et al. 2000; Marshall et al. 2003) found that the preservation for continued farming or the maintaining of agricultural use to be a major motivation for participating in a cost-share program. Because my study was

representative of an older population of landowners, the intense labor (physical and climate induced) involved with working agricultural landscapes in Mississippi may no longer be desirable to them. Older landowners tend to look for ways to lighten the work loads required of them. Because most participants in my study indicated they had completed some college level education, they may have more interest and/or skills in areas outside of the preservation and management of farmland. In addition, the preservation of farmland and open space may be a more desired goal in areas of the country where population numbers are greater and development pressures are more prevalent (e.g., the northeastern U.S., California), as opposed to Mississippi which is still largely rural and less populous than most other states. These findings suggest that regional and/or local differences may occur in the variables that are most important to program participants (James 2002). The specific program in question also appears to play a large role in determining the motivations for enrolling (i.e., controlling erosion, one of the main objectives laid out in CRP, was one of the highest rated motivations in my study that rarely came up in any of the literature I reviewed).

Fee-based wildlife recreation is a concept that has recently become viewed as a possible means of achieving voluntary wildlife habitat management and conservation on the part of landowners on private lands. My analysis revealed that hunting opportunities for leasing purposes was not a primary motivation for program participants, thus supporting my hypothesis. This finding is consistent with the scientific literature, which reveals that while recreational opportunities for self or family is a major motivation for participating, fee-based wildlife recreation receives far less interest (Forshay et al. 2005; Miller and Bromley 1989; Vandever et al. 2002). If natural resource agencies hope to

boost landowner involvement with fee-based wildlife recreation, they may want to use educational and outreach efforts designed to heighten landowner knowledge of and interest in this practice. This practice also may need to be mentioned as a possible option for landowners to pursue as participants in the marketing of programs. The results also supported my expectation that there is not a significant difference in the percentage of enrolled landowners interested (or participating) in fee access wildlife recreation among CRP, WRP, and WHIP.

Another issue that arises under the topic of cost-share programs is the monitoring of management practices that are implemented on enrolled acreages to assure program compliance. Most respondents in my study indicated that agency staff had performed inspections on their land, thus supporting my hypothesis. While the literature on this subject reports that monitoring of program enrolled properties does occur, different results have been found concerning landowner attitudes towards this practice. Some studies report that landowners view this monitoring as a problem, regarding it as an annoyance or an intrusion on personal property rights (Rilla et al. 2000). Other studies report that landowners welcome the monitoring of their properties, and view the amount of assistance they get from their respective agency as appropriate for program success (Vandever et al. 2002).

Although the results of this study supported my hypothesis that landowners do experience problems in securing a cost-share agreement to enroll land in cost-share programs, the amount of problems reported was miniscule. This finding likely relates to the high overall satisfaction ratings provided by participants in this study. None of the items regarding enrollment issues had an overall mean response value greater than 3 (on a

scale of 1 to 5 with 5 indicating a major problem with enrollment), indicating that the overall process of enrolling in cost-share programs seems to run fairly smoothly for most participants. The enrollment issues that landowners cited the most in my study were related to strict eligibility requirements and the application process being too complex. Those issues cited the least were related to communication (or lack thereof) between landowners and agency personnel and a lack of agency personnel available to assist landowners. These findings are consistent with the general trend found in the literature regarding problems encountered during the enrollment process (Kraft et al. 1996; Ostermeier et al. 2003). These findings all suggest that natural resource agencies seem to be doing a good job of keeping the lines of communication and assistance open between themselves and landowners; however, they may want to work on rewriting eligibility requirements that would open the door for more landowners to participate. There also may be a need to make the application process and program language easier to understand for the general population of private landowners.

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Table 2.1 Frequencies (%) depicting landowner responses (*n*) to the question "Are you a participant in any of the following three cost-share assistance programs for wildlife?" during the fall of 2006. Items ranked by frequency.

Program[a]	*n*	Frequency (%)
Conservation Reserve Program (CRP)	260	83.00
Wetlands Reserve Program (WRP)	30	9.00
Wildlife Habitat Incentives Program (WHIP)	24	8.00
Total	314	100.00

[a]If a respondent indicated they were enrolled in more than one of the three target programs, they were classified according to which program they had been enrolled in the longest.

Table 2.2 Frequencies (%) depicting landowner responses (*n*) to the question "To the best of your knowledge, has staff from the agency responsible (NRCS, FSA) for this program ever inspected management practices on your enrolled acreages?" during the fall of 2006. Items ranked by frequency.

Answer	*n*	Frequency (%)
Yes	239	85.00
No	43	15.00
Total	282	100.00

Table 2.3 Frequencies (%) depicting landowner responses (*n*) to the question "Which of the following best describes your involvement in this program?" during the fall of 2006. Items ranked by frequency.

Item	*n*	Frequency (%)
Landowner, but not actively involved in farming	143	49.14
Landowner/operator, actively involved in farming	142	48.80
Other	5	1.72
Trustee	1	0.34
Renter and operator, actively involved in farming	0	0.00
Total	291	100.00

Table 2.4 Frequencies (%) depicting landowner responses (*n*) to the question "How would you best describe your land type prior to enrollment in this program?" during the fall of 2006. Items ranked by frequency.

Item	*n*	Frequency (%)
Mostly non-grass cropland	151	52.43
Other	35	12.15
Mostly trees	31	10.76
Mostly native grasses	23	7.99
Mostly wet areas with crops	22	7.64
Mostly non-native grasses	21	7.29
Mostly wet areas without crops	5	1.74
Total	288	100.00

Table 2.5 Frequencies (%), means ($\bar{x}$), and standard errors (SE) depicting landowner responses (*n*) to the statement "Please indicate how important each of the following reasons were to you when you enrolled your property in this cost-share assistance program for wildlife," during the fall of 2006. Items ranked by mean.

Item	Not at all important (%)	Slightly important (%)	Moderately important (%)	Very important (%)	Extremely important (%)	*n*	$\bar{x}$	SE
To do my part in being a good steward of the land	2.63	6.02	17.67	38.72	34.96	266	3.97	0.06
To increase wildlife on my property	4.15	6.42	17.74	36.98	34.72	265	3.92	0.07
To control erosion	10.69	12.21	14.89	28.24	33.97	262	3.62	0.08
To establish an additional source of income	10.07	11.57	19.03	26.12	33.21	268	3.61	0.08
To increase hunting opportunities for self/family	11.49	12.26	16.09	29.12	31.03	261	3.56	0.08
To improve water quality	15.69	14.12	20.78	24.31	25.10	255	3.29	0.09
To maintain ownership of my land	33.07	8.27	11.02	16.14	31.50	254	3.04	0.11
To increase aesthetic appeal of the property	19.52	18.73	23.11	19.52	19.12	251	3.00	0.09
To restore land to pre-agricultural condition	23.32	17.39	19.37	21.34	18.58	253	2.94	0.09
To lower land management costs	33.60	11.46	18.97	20.16	15.81	253	2.73	0.09

Table 2.5 (continued)

To reduce dust due to bare ground	40.89	20.65	17.00	11.74	9.72	247	2.29	0.09
To allow me to continue farming my land	52.23	14.17	11.34	11.74	10.53	247	2.14	0.09
To increase hunting opportunities for leasing purposes	56.56	14.34	8.61	12.30	8.20	244	2.01	0.09

Table 2.6 Frequencies (%), means ($\bar{x}$), and standard errors (SE) depicting landowner responses (*n*) to the statement "We just asked you to rate various reasons that influenced your participation in this cost-share assistance program for wildlife. In the following questions, please indicate the extent to which you agree or disagree with the following statements on how it has performed compared to your expectations," during the fall of 2006. Items ranked by mean.

Item	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	*n*	$\bar{x}$	SE
I have increased wildlife on my property	0.77	1.93	12.74	50.19	34.36	259	4.15	0.05
I believe I have become a better steward of the land	1.98	0.40	10.67	54.55	32.41	253	4.15	0.05
I have maintained ownership of my land	4.35	1.58	18.58	37.15	38.34	253	4.04	0.06
I have increased hunting opportunities for self/family	2.40	4.00	14.80	48.80	30.00	250	4.00	0.06
I have seen a reduction in erosion	2.77	3.56	18.58	42.29	32.81	253	3.99	0.06
I have increased aesthetic appeal of the property	2.86	3.27	25.71	41.22	26.94	245	3.86	0.06

Table 2.6 (continued)

I have established an additional source of income	5.49	6.67	20.00	43.53	24.31	255	3.75	0.07
I have restored land to pre-agricultural condition	5.20	5.20	24.00	41.20	21.40	250	3.74	0.07
I have seen improvements in water quality	3.24	3.64	38.87	33.60	30.65	247	3.65	0.06
I have seen a reduction in dust due to bare ground	4.92	7.38	38.52	28.28	20.90	244	3.53	0.07
I have seen a decrease in my land management costs	9.72	9.72	34.31	31.58	14.57	247	3.32	0.07
I have been able to maintain farming practices on my land	17.21	11.07	29.51	26.64	15.57	244	3.12	0.08
I have increased hunting opportunities for leasing purposes	26.34	9.05	27.98	25.51	11.11	243	2.86	0.09

Table 2.7 Mean importance of various items as reasons for landowner's enrolling in a cost-share program, mean performance of those items, and gap scores indicating the difference between importance and performance scores during the fall of 2006. All items were classified as positive disconfirmation (expectations exceeded). Each performance item started with "I." Items ranked by gap score.

DISCONFIRMATION Performance Item	Mean Importance[a]	Mean Performance[a]	Gap Score
have seen a reduction in dust due to bare ground	2.29	3.53	1.24
have maintained ownership of my land	3.04	4.04	1.00
have been able to maintain farming practices on my land	2.14	3.12	0.98
have increased aesthetic appeal of property	3.00	3.86	0.86
have increased hunting opportunities for leasing purposes	2.01	2.86	0.85
have restored land to pre-agricultural condition	2.94	3.74	0.80
have seen a decrease in my land management costs	2.73	3.32	0.59
have increased hunting opportunities for self/family	3.56	4.00	0.44
have seen a reduction in erosion	3.62	3.99	0.37
have seen improvements in water quality	3.29	3.65	0.36
have increased wildlife on my property	3.92	4.15	0.23
believe I have become a better steward of the land	3.97	4.15	0.18
have established an additional source of income	3.61	3.75	0.14

[a] Responses were measured on scale where 1 = "strongly disagree," 2 = "disagree," 3 = "neutral," 4 = "agree," 5 = "strongly agree."

Table 2.8 Frequencies (%) depicting landowner responses (*n*) to the question "What negative impacts (if any) to your land have you observed as a result of enrolling in this cost-share assistance program for wildlife?" during the fall of 2006. Items ranked by frequency.

Item	*n*	Frequencies (%)*
No negative effects have been observed	172	54.78
Potential fire hazard	32	10.19
Source of weeds	28	8.92
Makes farm appear unkempt or poorly managed	26	8.28
Attracts unwanted requests for permission to hunt	22	7.01
Attracts unwanted wildlife	12	3.82
Too much cropland taken out of production	11	3.50
Negative effects on local economy	8	2.55
Causes problems with neighbors	5	1.59
Other	4	1.27

*Frequencies were calculated by dividing *n* by the total number of respondents enrolled in one of the three target programs (314).

Table 2.9 Frequencies (%), means ($\bar{x}$), standard errors (SE), & rank scores (Rank) depicting landowner responses (*n*) to the statement "Please indicate the extent to which you agree or disagree with the following statements regarding enrollment issues with this cost-share assistance program for wildlife," during the fall of 2006. Items ranked according to rank score.

Item	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	$\bar{x}$	SE	Rank[a]
Eligibility requirements were too strict (*n* = 258)	11.24	30.23	41.47	12.02	5.04	2.69	0.06	1
Management practices for me to undertake were unclear (*n* = 254)	20.08	42.91	23.62	10.24	3.15	2.33	0.06	2
The application process was too complex (*n* = 253)	17.00	38.74	34.39	7.11	2.77	2.40	0.06	3
There was a lack of communication between me and agency personnel (*n* = 253)	26.88	37.94	26.09	7.11	1.98	2.19	0.06	4
Inadequate information sources were available (*n* = 255)	23.14	39.61	29.41	3.92	3.92	2.26	0.06	5
There was a lack of agency personnel to assist me (*n* = 253)	24.51	54.06	23.72	3.95	2.77	2.15	0.06	6

[a] based on % of respondents who reported "agree" or "strongly agree"

Table 2.10 Frequencies (%), means ($\bar{x}$), and standard errors (SE) depicting landowner responses (*n*) to the question "Overall, how satisfied are you with this cost-share assistance program arrangement?" during the fall of 2006. Responses are listed for all program participants ('All participants'), those enrolled in CRP ('CRP participants'), those enrolled in WRP ('WRP participants') and those enrolled in WHIP ('WHIP participants').

Category	Not at all Satisfied (%)	Slightly Satisfied (%)	Moderately Satisfied (%)	Very Satisfied (%)	Extremely Satisfied (%)	*n*	$\bar{x}$	SE
All participants	1.48	6.67	27.78	46.67	17.41	270	3.72	0.05
CRP participants	0.44	6.67	24.44	51.56	16.89	225	3.78	0.05
WRP participants	12.00	0.00	48.00	24.00	16.00	25	3.32	0.23
WHIP participants	0.00	15.00	40.00	20.00	25.00	20	3.55	0.24

Table 2.11 Frequencies (%) depicting landowner responses (*n*) to the question "Overall, how difficult was the process of participating in this cost-share assistance program for wildlife?" during the fall of 2006.

Not at all Difficult		Slightly Difficult		Moderately Difficult		Very Difficult		Extremely Difficult		
(%)	*n*	(%)	*n*	(%)	*n*	(%)	*n*	(%)	*n*	Total
51.13	136	29.32	78	16.54	44	1.50	4	1.50	4	266

$\bar{x}$ = 1.73, SE = 0.05

Table 2.12 The results of performance items correlated with overall satisfaction regarding participation in CRP, WRP, and WHIP within Mississippi during the fall of 2006. Items ranked by Spearman's rho.

Item[a]	Spearman's rho[b]	SE	*P*
I believe I have become a better steward of the land	0.315	0.049	<0.001
I have increased aesthetic appeal of the property	0.295	0.061	<0.001
I have restored land to pre-agricultural condition	0.291	0.066	<0.001
I have seen a reduction in erosion	0.265	0.060	<0.001
I have maintained ownership of my land	0.246	0.064	<0.001
I have established an additional source of income	0.246	0.067	<0.001
I have seen improvements in water quality	0.234	0.061	0.000
I have seen a reduction in dust due to bare ground	0.191	0.068	0.003
I have increased wildlife on my property	0.187	0.048	0.003
I have been able to maintain farming practices on my land	0.165	0.083	0.011
I have seen a decrease in my land management costs	0.161	0.072	0.013

Table 2.12 (continued)

I have increased hunting opportunities for self/family	0.076	0.058	0.237
I have increased hunting opportunities for leasing purposes	-0.049	0.087	0.449

[a] Responses were measured on a scale where 1 = "strongly disagree," 2 = "disagree," 3 = "neutral," 4 = "agree," 5 = "strongly agree."
[b] Items were correlated with a 5-point satisfaction scale where 1 = "not at all satisfied," 2 = "slightly satisfied," 3 = "moderately satisfied," 4 = "very satisfied," and 5 = "extremely satisfied."

Table 2.13 Frequencies (%), means ($\bar{x}$), and standard errors (SE) depicting landowner responses (*n*) to the statement "Please indicate how effective you believe each of the following would be in encouraging other landowners to participate in this cost-share assistance program for wildlife," during the fall of 2006. Items ranked by mean.

Item	Not at all effective (%)	Slightly effective (%)	Moderately effective (%)	Very effective (%)	Extremely effective (%)	*n*	$\bar{x}$	SE
More money/acre	2.21	3.69	10.33	29.52	54.24	271	4.30	0.06
More enrollment options	3.40	7.17	24.91	41.13	23.40	265	3.74	0.06
Longer contact duration	6.67	10.74	25.56	27.78	29.26	270	3.62	0.07
Making programs more simple to understand	6.82	14.39	27.27	27.65	23.86	264	3.47	0.07
More technical assistance	3.41	11.36	42.42	29.17	13.64	264	3.38	0.06
Increased publicity/marketing of available programs	6.92	14.62	33.08	29.23	16.15	260	3.33	0.07
Longer sign-up period	8.96	16.42	35.82	25.37	13.43	268	3.18	0.07
More interaction with agency personnel	8.37	17.49	37.64	25.48	11.03	263	3.13	0.07

Table 2.14 Frequencies (%), means ($\bar{x}$), and standard errors (SE) depicting landowner responses (*n*) to the statement "We are interested in determining reasons why landowners do not participate in cost-share assistance programs that provide benefits for wildlife. Please indicate the extent to which you agree or disagree with the following statements," during the fall of 2006. Items ranked by mean.

Item	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	*n*	$\bar{x}$	SE
Cost-share programs do not offer enough financial incentive	5.14	13.14	29.14	32.00	20.57	175	3.50	0.08
I expect to earn more growing crops on my land	5.49	16.48	26.92	30.77	20.33	182	3.44	0.09
Long-term easements on cost-share acres are troublesome	7.65	15.29	37.06	28.82	11.18	170	3.21	0.08
I believe control over my land would be lost	10.53	15.20	33.33	30.41	10.53	171	3.15	0.09
I do not want the hassle of working with the federal government on cost-share acres	8.19	15.79	38.60	29.82	7.60	171	3.13	0.08
I have goals that are different from those listed within cost-share programs	8.19	17.54	48.54	18.71	7.02	171	2.99	0.08

Table 2.14 (continued)

I do not know enough about cost-share programs	11.65	20.23	39.88	19.08	9.25	173	2.94	0.08
I do not want future owners (heirs) to have to deal with the program	10.29	21.14	41.71	20.00	6.86	175	2.92	0.08
Pre-application process is too complex	8.72	25.00	44.77	14.53	6.98	172	2.86	0.08

CHAPTER III

NRCS COST-SHARE PROGRAM SURVEY

Introduction

A critical challenge faced by natural resource agencies is how to promote and encourage conservation practices on private lands while at the same time meeting the personal needs of the landowners with whom they interact. This challenge is heightened by the fact that private landowners are a diverse group who cannot be labeled with a single philosophy regarding their land values. Landowner values vary with education, age, source and amount of income, place of residence, location of upbringing, and family history (James 2002). If conservation programs are to be a successful tool on private lands, all barriers to communication and successful partnerships between private landowners and district conservationists must be addressed.

Most research concerning the social implications of conservation programs suggests a highly unstable relationship between landowners and conservationists. Ostermeier et al. (2003) found that district conservationists and conservation oriented stakeholders voiced frustrations and difficulties regarding working with private landowners. Respondents in this study indicated that government conservation programs usually have strict requirements and conditions that do not coincide with landowners' interests or conditions. In a survey of attitudes of farmers and conservationists in Great Britain, Carr and Tait (1991) found that while both groups had overall highly favorable

attitudes towards conservation, distinct differences arose when interviews moved to a more detailed discussion of the main issues. Conservationists indicated loss of habitat and associated wildlife as the main problem in practicing conservation, whereas farmers saw the threat of increased restrictions on the way they farmed as the main problem. Qualitative results from this study also revealed that farmers' perceptions of an attractive landscape and of wildlife differed dramatically from those of conservationists, so that what they meant by stewardship can also be assumed to differ.

A key area of concern in the design and implementation of cost-share programs is whether landowners (whether current or potential participants) are allowed to have an active role in this process. In examining causes and consequences of environmental disputes between private landowners and resource professionals, Peterson and Horton (1995) found that if federal agencies prevent landowners from having any input in the drafting of environmental policy, they will have an even harder time establishing a cooperative relationship with landowners once the laws are passed. Many studies indicate that although views and opinions between the two groups sometimes clash, resource professionals are strongly in favor of landowners being involved in the design and implementation of cost-share programs (Ostermeier et al. 2003; Newton 2001). This topic also stresses the social issue of the general public's right to access to information on a subject that concerns the future of the environment (Higgins 1991).

Several studies also have been conducted to determine types of information sources that are sought by farmers in managing their lands. Korsching and Hoban (1990) interviewed 600 farmers from 16 southwestern Iowa counties to examine the roles of different sources of information in the decision-making process of adopting conservation

practices. The study indicated that the two information sources most frequently mentioned were farm magazines and other farmers, with 86 percent and 82 percent, respectively. The NRCS was third with 77 percent, followed by local papers with 72 percent. The authors suggest, however, that the important finding here is not necessarily which conservation information sources farmers state they use the most, but which information sources are related to perceptions of problems and use of conservation practices. The two information sources most significantly and consistently related were NRCS and farm magazines. NRCS is more strongly related to actual use of specific conservation practices than other information sources because farmers often turn to the agency for cost-share assistance when implementing conservation practices. The authors do suggest, however, that some types of mass media, particularly farm magazines and local papers, can be used effectively to promote soil and water conservation among farmers.

Newton (2001) developed a list of seven important lessons learned by NRCS conservationists that can be applied to environmental education and outreach efforts:

1. Keep the message simple.
2. People will support messages that affect them personally.
3. People support ideas when they know what actions they can take to improve the situation.
4. People support ideas put forth by people they trust.
5. Events more than words shape people's opinions.
6. People will allow local leaders to make decisions for them if they feel they have some input in the process.

7. The closer an event or message is to home, the better.

This study also discusses the various mechanisms used by NRCS in public outreach to mass audiences and individuals. The mechanisms include: national documents, national advertising campaigns, demonstration projects, school activities, and local outreach.

To communicate the benefits associated with any conservation program, resource agencies must have some means of measuring program success. Potential clients want information on how a particular program will meet their personal goals and needs and how program evaluation will improve the program's overall effectiveness. McLaughlin and Jordan (1999) described a Logic Model process, a tool used by program evaluators, in hopes of helping managers develop a way to tell the performance story for their program. The Logic Model describes the logical linkages among program resources, activities, outputs, customers reached, and short, intermediate and longer term outcomes. The telling of a program's performance study must provide answers to critical questions such as: "What are you trying to achieve and why is it important?", "How will you measure effectiveness?", and "How are you actually doing?" The final product of the Logic Model consists of a diagram(s) that reveals the essence of the program, text that describes the Logic Model diagram, and a measurement plan. The authors conclude that program managers, armed with this information, can successfully meet accountability requirements and present a logical argument, or story, for their program.

It must be determined how the views and opinions of district conservationists compare with those of private landowners within Mississippi regarding landowner motivations for enrolling in cost-share programs, problems that landowners encounter on their land as a result of enrolling, and problems landowners encounter during the

enrollment process so that any discrepancies that occur can be addressed. There may be certain areas that resource professionals should concentrate more or less energy to maintain high landowner participation and satisfaction levels. This information also is important to have so that overseeing agencies can tailor the programs to not only meet the needs of participants, but also retain current participants and attract new ones. It is only by maintaining high levels of participation and satisfaction on the part of landowners that the desired environmental benefits of cost-share programs can be achieved.

This study involves multiple comparisons of survey data collected from district conservationists and private landowners throughout Mississippi. The private landowner study, which was discussed in the previous chapter, involved a mail questionnaire designed to solicit information regarding landowner motivations, satisfaction levels, and problems encountered with cost-share programs. A random sample of 2,000 private landowners within Mississippi was surveyed in this study. The three programs of interest were the Conservation Reserve Program (CRP), the Wetlands Reserve Program (WRP) and the Wildlife Habitat Incentives Program (WHIP). Based on my literature review, the following hypotheses were tested.

> H_1: District conservationists and landowners differ on the measure of importance placed on reasons for enrollment.
>
> H_2: District conservationists and landowners differ on negative impacts reported on program enrolled lands
>
> H_3: District conservationists and landowners report differences with regards to problems landowners encounter during the enrollment process.
>
> H_4: District conservationists will not rate their training with regards to program practices as adequate.

Methods

I collected data from the 2007 NRCS Cost-Share Program Survey conducted for The Natural Resource Enterprises Program in the Department of Wildlife and Fisheries at Mississippi State University. The sampling frame consisted of county level district conservationists through NRCS within the state of Mississippi. I obtained email contact information from public records available through the U.S. Department of Agriculture (USDA) website. To obtain email addresses for those counties that had no contact information listed on the website, I contacted state and individual county level USDA offices. Because some counties had position vacancies and some professionals oversaw more than one county, I selected 46 district conservationists within Mississippi to complete an internet questionnaire. For any non-deliverable email addresses that I encountered, I obtained new addresses from the local county NRCS offices for use in further mailings. My research project was reviewed and approved by the Mississippi State University Institutional Review Board (IRB) for the Protection of Human Subjects (Docket 07-044).

The 2007 NRCS Cost-Share Program Survey (Appendix B) consisted of a self-administered internet questionnaire designed to collect information on the objectives of this study as well as other environmental, social, and economic information beyond the scope of this article. The questionnaire mostly dealt with questions concerning: (1) reasons that resource professionals believe are important to landowners in their decision to enroll property in a cost-share program, (2) problems that resource professionals believe program participants encounter either on their land or during the process of enrolling in a cost-share program, (3) how program success is measured, and (4)

problems that resource professionals face with the delivery of cost-share program aspects. Prior to the initial mail out, the questionnaire was pre-tested and reviewed by selected NRCS employees in Alabama and Mississippi and outreach staff within the Department of Wildlife and Fisheries at MSU. After this reviewing, I included additional items as possible measures of program success and rewrote a few items in hopes of making the questionnaire easier to complete.

I used the Tailored Design Method developed by Dillman (2000) as a reference guide for survey design and mailing procedures. I sent three email mailings, as necessary depending on response patterns, to district conservationists between March and May 2007. I included a cover letter with each email that explained the importance and objectives of the survey, the importance of participation, the confidential nature of responses, and contact numbers in case the district conservationists had questions regarding the survey or human participation in social research. I stored names and email addresses for all recipients in a Microsoft Excel database. Each letter accompanying the email survey was addressed to each individual person using the merge function in Microsoft Word.

When questionnaires were returned to Mississippi State University, I made checks in the Microsoft Excel database to remove the individual from the possibility of further mailings. I made telephone calls to nonrespondents following each mail out in hopes of boosting the overall response rate. Data from usable questionnaires was automatically stored into a Microsoft Access database. I then transferred the data to a SAS Version 9.1 (SAS Institute., 2003) data set for analysis.

I first asked each recipient whether he or she oversaw or had dealings with CRP, WRP, and/or WHIP. Response format was 1=Yes and 2=No. If a recipient answered "No," they were directed to the end of the questionnaire to provide the email address to which the questionnaire had been sent. I solicited no further information from this group. If a recipient answered "Yes," they were directed to fill out the rest of the questionnaire in its entirety.

I first asked respondents to report number of acres enrolled in each program within their respective county (ies). I asked respondents questions identical to those asked of private landowners regarding: reasons why landowners enroll, problems landowners encounter on their land as a result of participating in a cost-share program, and problems landowners encounter during the enrollment process. Regarding reasons as to why landowners participate in cost-share programs, I asked respondents to indicate how important they believe each of 13 items to be in a landowner's decision to enroll property in a cost-share program on a 5-point importance continuum. Response format was 1=not at all important, 2=slightly important, 3=moderately important, 4=very important, and 5=extremely important. I asked participants if landowners wanted "to establish an additional source of income," "to increase wildlife on property," "to increase hunting opportunities for self/family," "to increase hunting opportunities for leasing purposes," "to do their part in being a good steward of the land," "to restore land to pre-agricultural condition," "to maintain ownership of their land," "to be able to continue farming their land," "to lower land management costs," "to increase aesthetic appeal of the property," "to control erosion," "to improve water quality," "to reduce dust due to bare ground," and "other" with a request for specification. I calculated frequencies and means for each item.

Because my data were ordinal, I performed a Wilcoxon Rank Sum Test using PROC NPAR1WAY in SAS v. 9.1 (SAS Institute., 2003) to compare responses between the two groups (landowners and resource professionals) concerning landowner motivations for enrolling in cost-share programs. I calculated mean responses for questions with ordinal data throughout my study for ease of table interpretation

Regarding problems that landowners may experience on their property, I provided participants with a list of nine possible negative impacts and asked them to indicate, in their experience, which (if any) landowners encountered as a result of participating in a cost-share program. This list included: "too much cropland taken out of production," "negative effects on local economy," "attracts unwanted wildlife," "attracts unwanted requests for permission to hunt," "source of weeds," "potential fire hazard," "makes farm appear unkempt or poorly managed," "causes problems with neighbors," and "no negative effects have been reported." I calculated frequencies and total number responses for each item. I performed Fisher's Exact Test using PROC FREQ with the FISHER option in SAS v. 9.1 (SAS Institute., 2003) to test for independence between the recipients' status (as a private landowner or natural resource professional) and their response regarding problems landowners encounter on their land as a result of program participation. I conducted this test to determine any significant differences between responses of the two groups relating to problems on the ground.

Regarding problems that landowners may experience during the enrollment process, I asked participants to indicate the extent to which they agreed or disagreed with six items on a five-point, Likert-type scale. These items included: "eligibility requirements are too strict," "there is a lack of communication between landowners and

agency personnel," "inadequate information sources are available to landowners," "the application process is too complex," "there is a lack of agency personnel available to assist landowners," "management practices for landowners to undertake are unclear," and "other" with a request for specification. Response format was 1=strongly disagree, 2-disagree, 3=neutral, 4=agree, and 5=strongly agree. I calculated frequencies and mean responses for each item. I performed a Wilcoxon Rank Sum Test using PROC NPAR1WAY in SAS v. 9.1 (SAS Institute., 2003) to compare the responses of private landowners and resource professionals for each item.

I also asked district conservationists questions identical to those asked of private landowners regarding ways in which they believe landowners who are not participating might be encouraged to enroll in cost-share programs and possible reasons why nonparticipants choose not to enroll in cost-share programs. Concerning ways in which landowners might be encouraged to participate, I asked participants to rate the effectiveness of seven measures on a 5-point effectiveness continuum. These measures included: "more money/acre," "more technical assistance," "more enrollment options," "longer contract duration," "longer sign-up period," "more interactions between landowner and agency personnel," "increased publicity/marketing of available programs," and "other" with a request for specification. Response format was 1=not at all effective, 2=slightly effective, 3=moderately effective, 4=very effective, and 5=extremely effective. I calculated frequencies and mean responses for each item.

Regarding reasons why some landowners prefer not to participate in cost-share programs, I asked participants the extent to which they agreed or disagreed with nine items on a five-point Likert-type scale. These items were: "cost-share assistance

programs do not offer enough financial incentive," "landowners expect to earn more growing crops on land," "landowners believe control over their land would be lost," "landowners do not want the hassle of working with the federal government on cost-share acres," "long-term easements on cost-share acres are troublesome," "landowners do not want future owners (heirs) to have to deal with program specifics," "landowners have goals that are different," "landowners do not know enough about cost-share assistance programs," "pre-application process is too complex," and "other" with a request for specification. Response format was 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. I calculated frequencies and mean responses for each item.

I also asked survey recipients questions about topics not included in the landowner survey such as how program success is measured and what problems district conservationists face while trying to implement program practices. Regarding the measurement of program success, I asked participants the extent to which they agreed or disagreed with ten items on a five point Likert-type scale. The items included: "acreage enrollment," "habitat condition," "tree survival," "achieving landowner goals," "water quality measures," "air quality measures," "biodiversity (species counts, nest counts)," "erosion control," "increased wildlife habitat," and "increases aesthetic value of land." Response format was 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. I calculated frequencies and mean responses for each item.

To determine possible problems with the delivery of cost-share program aspects, I asked survey participants to indicate the extent to which they agreed or disagreed with each of six items. These items included: "there is not enough time available for working on programs," "there is a lack of staff or personnel available to work," "insufficient funds

are available to support travel costs," "funding available to landowners is insufficient," "employee training with regards to program practices has been inadequate," and "landowners lack knowledge concerning program objectives." Response format was 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree. I calculated means and frequencies for each item. I performed a 95% confidence interval to determine if the percentage of respondents who rated their training with regards to program practices as inadequate varied significantly from zero.

Lastly, I asked survey participants if they had any experience or dealings with the transferring of cost-share program delivery services to third party technical service providers (TSPs). Response format was 1=Yes, 2=No. In the event that a respondent answered "Yes," I then asked the extent to which they agreed or disagreed with six items regarding problems resulting from the change in delivery services. These items included: "landowner/client confidentiality is diminished," "there is a lack of program knowledge and awareness among TSPs," "landowners do not trust TSPs," "TSPs have less time and resources available than federal employees," "federal employees experience feelings of alienation from clients," "federal employees have doubts regarding TSPs ability to adequately fill this role," and "other" with a request for specification. Response format was 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

I also asked participants the extent to which they agreed or disagreed with five items regarding realized benefits from this transfer of services. These items included: "programs and services available to landowners can be increased," "waiting time for request processing is reduced," "workload of federal agencies is reduced," "landowners are more readily exposed to latest technology," "landowners can choose their own

provider from a list of eligible providers," and "other" with a request for specification. Response format was 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree. I calculated frequencies and mean responses for all items related to problems and benefits.

Results

Of the 46 individuals sampled, 36 responded to the online questionnaire resulting in an overall effective mailing response rate of 78.3%. All of the respondents indicated they had dealings with at least one of the three target programs (CRP, WRP, and WHIP).

When asked to indicate which reasons they believed were most important in a landowner's decision to enroll property in a cost-share program (Table 3.1), over 50% of district conservationists rated: "to increase hunting opportunities for self/family" (71.43%), "to increase wildlife on property" (66.67%), "to establish an additional source of income" (61.11%), "to lower land management costs" (51.43%), and "to maintain ownership of land" (51.43%) as very to extremely important. According to the Wilcoxon Rank Sum test, district conservationists' response to five of the 13 importance items differed significantly from the response given by private landowners at the 5% level (Table 3.1). I found significant differences for the items: "to do their part in being a good steward of the land" (Z = -3.881, $P < 0.001$, df = 1) (73.68% of landowners rated this as very to extremely important as opposed to only 45.71 of district conservationists), "to be able to continue farming their land" (Z = 3.757, $P < 0.001$, df = 1) (66.40% of landowners rated this as not at all or slightly important as opposed to 34.29% of district conservationists), "to increase hunting opportunities for leasing purposes" (Z = 3.366, P

= 0.001, *df* = 1) (70.90% of private landowners rated this as not at all or only slightly important as opposed to 48.57% of district conservationists), "to lower land management costs" ($Z = 2.096$, $P = 0.036$, *df* = 1) (45.06% of private landowners rated this as not at all or only slightly important as opposed to 28.58% of district conservationists), and "to restore land to pre-agricultural condition" ($Z = -2.064$, $P = 0.039$, *df* = 1) (65.72% of district conservationists rated this as not at all or only slightly important as opposed to only 40.71% of private landowners). Thus, I accepted my hypothesis that district conservationists and landowners differ on the measure of importance placed on reasons for enrollment.

When questioned about problems they believe landowners face on their land as a result of cost-share program participation, most respondents (47%, $n = 17$) indicated that no negative effects had been reported. However, 36% ($n = 13$) reported that too much cropland was taken out of production, whereas 17% ($n = 6$) reported "negative impacts on local economy," "source of weeds," and "potential fire hazard" as individual impacts (Table 3.2). According to the Fisher Exact Test for independence, response to two of the listed items, "too much cropland taken out of production," ($P < 0.001$, *df* = 1) (36.11% of district conservationists indicated this to be a problem as opposed to 3.50% of private landowners) and "negative effects on local economy," ($P = 0.002$, *df* = 1) (16.67% of district conservationists indicated this to be a problem as opposed to 2.55% of private landowners) was dependent on a respondent's status as a private landowner or natural resource professional, indicating a significant difference in the level of response for both of these items between the two groups. Thus, I accepted my hypothesis that district

conservationists and landowners differ on negative impacts reported on program enrolled lands.

When asked about possible problems landowners face during the enrollment process (Table 3.3), 50% of district conservationists agreed or strongly agreed that the "application process is too complex." At the other end, more than 50% strongly disagreed or disagreed that "there is a lack of communication with agency personnel" (61.11%), "management practices for landowners to undertake are unclear" (65.71%), and that "eligibility requirements are too strict" (77.78%). According to the Wilcoxon Rank Sum test, district conservationists' answers to four of the six items regarding enrollment issues differed significantly from landowner responses at the 5% level (Table 3.3). I found significant differences for the items: "there is a lack of agency personnel available to assist" ($Z = 5.283$, $P < 0.001$, $df = 1$) (44.45% of district conservationists agreed or strongly agreed with this item as opposed to 6.72% of private landowners), "inadequate information sources are available" ($Z = 4.136$, $P < 0.001$, $df = 1$) (36.12% of district conservationists agreed or strongly agreed with this item as opposed to 7.84% of private landowners), "the application process is too complex" ($Z = 3.981$, $P < 0.001$, $df = 1$) (50% of district conservationists agreed or strongly agreed with this item as opposed to 9.88% of private landowners), and "eligibility requirements are too strict" ($Z = -2.472$, $P = 0.014$, $df = 1$) (77.78% of district conservationists strongly disagreed or disagreed with this item as opposed to 41.47% of private landowners). Thus I accepted my hypothesis that district conservationists and landowners report differences with regards to problems landowners encounter during the enrollment process.

When I asked participants to rate how effective seven items would be in encouraging non-participating landowners to become participants, more than 50% of district conservationists rated "more money/acre" (88.88%) and "more enrollment options" (58.33%) as very or extremely effective whereas most respondents rated "longer contract duration" (58.34%) and "longer sign-up period" (66.66%) as not at all or only slightly effective (Table 3.4). Concerning reasons why some private landowners choose not to participate in cost-share programs (Table 3.5), more than 50% of district conservationists agreed or strongly agreed that "long-term easements on cost-share acres are troublesome" (66.67%), "cost-share programs do not offer enough financial incentive" (63.89%), "landowners have goals that are different" (58.33%), "landowners do not want the hassle of working with the federal government on cost-share acres" (55.56%), "landowners do not know enough about cost-share programs" (52.78%), and "landowners do not want future owners to have to deal with program specifics" (50.00%). Regarding possible measures of program success (Table 3.6), more than 75% of district conservationists agreed or strongly with "increased wildlife habitat" (94.45%), "achieving landowner goals" (91.66%), "erosion control" (86.12%), and "acreage enrollment" (77.78%) as being indicators of cost-share program success.

When I asked participants to indicate what problems they encounter with the delivering of costs-share program aspects (Table 3.7), most agreed or strongly agreed that "there is a lack of staff or personnel available to work" (61.11%), "funding available to landowners is insufficient" (55.55%), "there is not enough time available for working on programs" (52.78%), and "landowners lack knowledge concerning program objectives" (50.00%). Most district conservationists disagreed that "employee training regarding

program practices has been inadequate" (50.00%). Based on the 95% confidence interval, I found that the percentage of district conservationists who rated their training as inadequate differed significantly from zero. Therefore, I accepted my hypothesis that district conservationists would not rate their training regarding program practices as adequate.

Thirteen district conservationists (13%) indicated that either they or their organization had to transfer cost-share program delivery services to a TSP. Regarding problems resulting from this change (Table 3.8), more than 75% of respondents agreed or strongly agreed that "federal employees have doubts regarding TSPs ability to adequately fill this role" (91.67%), and that "there is a lack of program knowledge and awareness among TSPs" (84.62%). More than 50% agreed or strongly agreed that "TSPs have less time and resources available than federal employees" (69.23%), "Federal employees experience feelings of alienation from clients" (61.54%) "landowners do not trust TSPs" (61.53%), and "landowner/client confidentiality is diminished" (61.53%). With regards to benefits resulting from this change, most district conservationists did not give positive responses (Table 3.9). More than 50% strongly disagreed or disagreed that "landowners are more readily exposed to latest technology" (61.54%), and that the "workload of federal agencies is reduced" (53.84%).

Discussion and Implications

This study examined the opinions and attitudes of district conservationists regarding private landowner participation in federal cost-share programs. Because only NRCS district conservationists in Mississippi were included in the final sampling frame,

no definitive conclusions can be drawn regarding the opinions and attitudes of all natural resource agency staff across the state or elsewhere. I originally hoped to survey staff employed through the USDA Farm Service Agency (FSA) within Mississippi, but after asking for time to review the survey FSA opted out of participating.

Although some differences were found between the responses of district conservationists and private landowners regarding landowner motivations for enrolling in cost-share programs, the items with the most positive ratings were similar for both groups. In addition, the overall response provided by both groups did not differ significantly for eight of the thirteen tested items. These findings suggest that district conservationists have a fairly good understanding of the reasons why landowners choose to enroll in cost-share programs and of the personal goals held by program participants. District conservationists should concentrate efforts to ensure these motivations are addressed through the programs they administer. Any efforts conducted to market these programs to private landowners (potential participants) should include explanations of how these and other landowner expectations can be met through participating. In addition, because landowner motivations can be expected to change over time (James 2002), it is important for natural resource agencies to maintain up to date records regarding landowner motivations for participating, to best serve their clients. Because district conservationists seem to be aware of what is important to program participants, this may contribute to the overall high satisfaction levels reported by landowners regarding their program arrangement.

Concerning items related to problems encountered on property after enrolling in a cost-share program, the level of response to only two out of the ten listed items

("negative effects on local economy" and "too much cropland taken out of production") was significantly different between landowners and district conservationists. This finding suggests that district conservationists throughout Mississippi have a positive understanding and realization of the problems that program participants face on their land. A second important note is that for both groups of respondents, most reported that no negative effects had been observed or reported, suggesting that program participants have encountered few if any obstacles on their land as a result of enrolling. A third critical finding in this matter is that for the two items for which the level of response differed significantly between the two groups, percentage of district conservationists who indicated these to be problems encountered on program property was greater than that of private landowners (current participants). This last finding suggests that district conservationists may even be overestimating or overshooting amount of difficulty that program participants encounter on their enrolled acreages.

Regarding problems that landowners face during the process of enrolling in a cost-share program, a significant difference was found between the responses of private landowners and district conservationists for four of the six possible items. This suggests that district conservationists lack awareness of the enrollment issues that are most troublesome to landowners. However, a critical point here is that for three of the four items that yielded significantly different responses, the average rank score of district conservationists was significantly greater than that provided by private landowners. The average rank score reported by district conservationists also was greater (though not significantly) than that provided by private landowners for the remaining two items for which there was not a significant difference. These findings suggest that professionals

may be overestimating the difficulty that landowners actually face in the process of enrolling. Private landowners reported a more positive response for only one item: "eligibility requirements are too strict." This item also had the greatest average rank score reported by private landowners, compared to all other items, whereas it had the fifth greatest average rank score among district conservationists. This finding suggests that natural resource agencies may want to take a closer look at and/or rewrite the eligibility requirements regarding cost-share programs. This finding also coincides with a study by Ostermeier et al. (2003) who found that government conservation programs usually have strict requirements and conditions that do not mesh with landowners' interests or conditions.

Concerning effective ways to encourage landowner participation in cost-share programs, landowners and resource professionals had the same two greatest rated items ("More money/acre" and "More enrollment options"). This finding suggests that both groups agree on ways to promote cost-share program participation and that conservation organizations should look for ways to use measures related to increasing payments to landowners and having a broader range of enrollment options available to perspective participants. However, one measure that received a positive response among landowners that did not receive as much attention from resource professionals involves having longer contract durations. This finding suggests that resource agencies may want to possibly consider offering longer contract options under their cost-share programs. However, authorizing legislation and appropriate funding may restrict offering longer contracts, broader enrollment options, and payment arrangements.

Certain similarities and differences between the two groups also were noted in responses to a question addressing reasons as to why some landowners choose not to participate in cost-share programs. Both groups had high percentages report "cost-share programs do not offer enough financial incentive." However, landowners reported a high percentage response for the item "I expect to earn more growing crops on my land" whereas district conservationists reported greater percentage responses for items relating to long term easements being troublesome, landowners not wanting the hassle of working with the federal government, and landowners lacking knowledge concerning cost-share programs. This finding suggests that district conservationists believe landowners who choose not to enroll do so because of issues related to the particular program or the overseeing agency, whereas landowners choose not to enroll due to concerns related to personal financial gain. These findings are consistent with those of Rilla et al. (2000) who found that landowners listed specific deed restrictions including limits on additional housing as a concern in their easement-related experience.

A particular issue related only to district conservationists involves the various means by which the success of cost-share programs can be measured. The items with the greatest positive percentage scores in my study were "increased wildlife habitat," "achieving landowner goals," and "erosion control." According to the Logic Model process described by McLaughlin and Jordan (1999), the telling of any program's performance story must provide answers to the question of how program effectiveness is measured. Therefore, resource agencies like NRCS should use means by which to measure these top three indicators on enrolled lands and market the associated benefits/successes to prospective landowners. The authors also argue that program

managers must be able to provide potential and actual participants with some type of indication as to how the program is actually doing (i.e., are current participants satisfied with the programs? what ecological benefits resulting from these programs have been documented? how have enrollment rates changed in recent years?). District conservationists would need to have this type of information to sell cost-share programs to private landowners who would want to know if and how their goals are being met through a particular program.

A second issue related only to district conservationists involves problems they face with the delivery and administration of cost-share program aspects. My results indicate that a lack of staff or personnel available, a lack of funding, and a lack of time available for working on programs were the most encountered problems. Similar results were reported by Noah and Zhang (2001) in a review and analysis of state level conservation incentive programs. The authors found that the obstacle most cited by agency staff was (1) a lack of funding, followed by (2) a lack of data on baseline ecological conditions and on the effects of specific habitat improvements, and (3) the uncertainty regarding the temporal component of habitat improvements. Despite the diversity of programs examined in this study, the authors found a high degree of commonness regarding obstacles reported by agency staff. The problem of insufficient funding appears to be one that needs serious attention within natural resource agencies.

One final issue related only to district conservationists involves the transfer to cost-share program delivery services to TSPs. The Technical Service Provider program was created in the 2002 Farm Act to use the expertise of state agencies, nongovernmental organizations, and private individuals in aiding the NRCS with delivery of cost-share

program assistance to its customers (Burke et al. 2004). It was believed that TSPs would alleviate the problem of too few NRCS staff members being available to meet the ever-growing demand for technical assistance among cost-share program participants. It is likely that this type of transfer would yield both positive and negative results. Less than half of the district conservationists who took part in my study indicated having any experience with a transfer of services to a TSP. Among those that did, most indicated that the main problems resulting from this transfer were federal employees doubting the ability of TSPs to adequately fill the role of overseeing agency, a lack of program knowledge among TSPs, and TSPs having less time and resources available. Considering these findings, natural resource agencies may want to specifically survey program participants and potential participants regarding their attitudes and opinions towards TSPs. If participants do not fully trust TSPs, this type of service transfer may have a negative impact on overall program participation and satisfaction.

These same participants also indicated that the main benefits resulting from this change were an increase in programs and services available to landowners and a shorter waiting time for request processing. An important point here is that the mean responses for the items related to problems with the service transfer were greater than the mean responses for all of the items related to benefits. Furthermore, all of the items related to problems had mean scores above 3 (neutral) whereas only one of the items related to benefits had a mean score above 3, indicating an overall lack of confidence held by NRCS employees regarding TSP's ability to adequately fill the role of service provider. If landowners become aware of this lack of confidence, they will likely be less willing to enroll their land. NRCS (among other natural resource agencies) needs to address this

issue to maximize effective service delivery to program participants. Agencies may want to consider creating some type of licensure or certification program to ensure that provider quality remains high.

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Table 3.1 The results of a comparison of responses given by private landowners and district conservationists (NRCS) regarding landowner motivations for participating in cost-share programs during the spring of 2007; Differences were detected using Wilcoxon Rank Sum Test and items are ranked by *P*-value).

Item*	Group	Not at all important (%)	Slightly important (%)	Moderately important (%)	Very important (%)	Extremely important (%)	*n*	Z-value	*P*
To do my part in being a good land steward	Private Landowners	2.63	6.02	17.67	38.72	34.96	266		
	NRCS	0.00	22.86	31.43	37.14	8.57	35	-3.881	<0.001
To be able to continue farming the land	Private Landowners	52.23	14.17	11.34	11.74	10.53	247		
	NRCS	11.43	22.86	37.14	17.14	11.43	35	3.757	<0.001
To increase hunting opportunities for leasing purposes	Private Landowners	56.56	14.34	8.61	12.30	8.20	244		
	NRCS	17.14	31.43	34.29	14.29	2.86	35	3.366	0.001
To lower land management costs	Private Landowners	33.60	11.46	18.97	20.16	15.81	253		
	NRCS	14.29	14.29	20.00	31.43	20.00	35	2.096	0.036
To restore land to pre-agricultural condition	Private Landowners	23.32	17.39	19.37	21.34	18.58	253		
	NRCS	22.86	42.86	11.43	17.14	5.71	35	-2.064	0.039

Table 3.1 (continued)

To increase wildlife on property	Private Landowners	4.15	6.42	17.74	36.98	34.72	265		
	NRCS	0.00	5.56	27.78	50.00	16.67	36	-1.439	0.150
To control erosion	Private Landowners	10.69	12.21	14.89	28.24	33.97	262		
	NRCS	5.71	17.14	28.57	25.71	22.86	35	-1.156	0.248
To improve water quality	Private Landowners	15.69	14.12	20.78	24.31	25.10	255		
	NRCS	11.43	28.57	22.86	11.43	25.71	35	-0.737	0.461
To reduce dust due to bare ground	Private Landowners	40.89	20.65	17.00	11.74	9.72	247		
	NRCS	47.06	17.65	8.82	17.65	8.82	34	-0.548	0.584
To establish an additional source of income	Private Landowners	10.07	11.57	19.03	26.12	33.21	268		
	NRCS	2.78	27.78	8.33	19.44	41.67	36	0.470	0.638
To increase hunting opportunities for self/family	Private Landowners	11.49	12.26	16.09	29.12	31.03	261		
	NRCS	0.00	11.43	17.14	51.43	20.00	35	0.465	0.642

Table 3.1 (continued)

To maintain ownership of land	Private Landowners	33.07	8.27	11.02	16.14	31.50	254		
	NRCS	22.86	14.29	11.43	22.86	28.57	35	0.463	0.643
To increase aesthetic appeal of property	Private Landowners	19.52	18.73	23.11	19.52	19.12	251		
	NRCS	2.86	34.29	37.14	17.14	8.57	35	-0.269	0.788

*Responses were measured on a scale where 1 = “strongly disagree,” 2 = “disagree,” 3 = “neutral,” 4 = “agree,” 5 = “strongly agree.”

Table 3.2 The results of a comparison of responses given by private landowners and district conservationists regarding problems encountered by landowners on their property as a result of participating in a cost-share program during the spring of 2007; Differences were detected using Fisher's exact test and items are ranked by *P*-value.

Item	Private Landowners		District Conservationists		*P*
	n	(%)[a]	*n*	(%)[b]	
Too much cropland taken out of production	11	3.50	13	36.11	<0.001
Negative effects on local economy	8	2.55	6	16.67	0.002
Attracts unwanted wildlife	12	3.82	4	11.11	0.075
Other	4	1.27	2	5.56	0.124
Source of weeds	28	8.92	6	16.67	0.150
Causes problems with neighbors	5	1.59	2	5.56	0.162
Potential fire hazard	32	10.19	6	16.67	0.265
No negative effects have been observed	170	54.78	17	47.22	0.384
Makes farm appear unkempt or poorly managed	26	8.28	4	11.11	0.540
Attracts unwanted requests for permission to hunt	22	7.00	3	8.33	0.737

[a]Percentages were calculated by dividing *n* by the total number of landowners enrolled in one of the three target programs (314).
[b]Percentages were calculated by dividing *n* by the total number of district conservationists who responded to the survey (36).

Table 3.3 The results of a comparison of responses given by private landowners and district conservationists (NRCS) regarding problems encountered by landowners during the process of enrolling in a cost-share program during the spring of 2007; Differences were detected using Wilcoxon Rank Sum Test and items are ranked by *P*-value (*P)*.

Item	Group	Not at all important (%)	Slightly important (%)	Moderately important (%)	Very important (%)	Extremely important (%)	*n*	*Z*-value	*P*
Lack of agency personnel available to assist	Private Landowners	24.51	54.06	23.72	3.95	2.77	253		
	NRCS	0.00	36.11	19.44	27.78	16.67	36	5.283	<0.001
Inadequate information sources are available	Private Landowners	23.14	39.61	29.41	3.92	3.92	255		
	NRCS	0.00	38.89	25.00	30.56	5.56	36	4.136	<0.001
Application process is too complex	Private Landowners	17.00	38.74	34.39	7.11	2.77	253		
	NRCS	2.78	36.11	11.11	25.00	25.00	36	3.981	<0.001
Eligibility requirements were too strict	Private Landowners	11.24	30.23	41.47	12.02	5.04	258		
	NRCS	2.78	75.00	8.33	8.33	5.56	36	-2.472	0.014
There is a lack of communication with agency personnel	Private Landowners	26.88	37.94	26.09	7.11	1.98	253		
	NRCS	8.33	52.78	25.00	13.89	0.00	36	1.613	0.107
Management practices to undertake were unclear	Private Landowners	20.08	42.91	23.62	10.24	3.15	254		
	NRCS	8.57	57.14	25.71	8.57	0.00	35	0.343	0.732

Table 3.4 Frequencies (%), means ($\bar{x}$), and standard errors (SE), depicting district conservationist responses (*n*) to the statement "Please indicate how effective you think each of the following would be in encouraging landowners to participate in cost-share programs," during the spring of 2007. Items ranked by mean.

Item	Not at all effective (%)	Slightly effective (%)	Moderately effective (%)	Very effective (%)	Extremely effective (%)	*n*	$\bar{x}$	SE
More money/acre	0.00	5.56	5.56	44.44	44.44	36	4.28	0.81
More enrollment options	2.78	11.11	27.78	47.22	11.11	36	3.53	0.94
Increased publicity/marketing of available programs	5.56	11.11	38.89	30.56	13.89	36	3.36	1.05
More interaction between landowner and agency personnel	2.78	13.89	41.67	30.56	11.11	36	3.33	0.96
More technical assistance	8.33	13.89	33.33	30.56	13.89	36	3.28	1.14
Longer contract duration	30.56	27.78	19.44	19.44	2.78	36	2.36	1.20
Longer sign-up period	22.22	44.44	16.67	16.67	0.00	36	2.28	1.00

Table 3.5 Frequencies (%), means ($\bar{x}$), and standard errors (SE) depicting district conservationist responses (*n*) to the statement "We are interested in your perceptions of why some landowners choose not to participate in cost-share programs that provide benefits for wildlife. Please indicate the extent to which you agree or disagree with the following statements," during the spring of 2007. Items ranked by mean.

Item	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	*n*	$\bar{x}$	SE
Long-term easements on cost-share acres are troublesome	0.00	13.89	19.44	55.56	11.11	36	3.64	0.87
Cost-share programs do not offer enough financial incentive	0.00	33.33	2.78	47.22	16.67	36	3.47	1.13
Landowners do not want the hassle of working with the federal government on cost-share acres	0.00	25.00	19.44	38.89	16.67	36	3.47	1.06
Landowners have goals that are different	0.00	19.44	22.22	50.00	8.33	36	3.47	0.91
Landowners do not know enough about cost-share programs	2.78	30.56	13.89	41.67	11.11	36	3.28	1.11
Landowners do not want future owners (heirs) to have to deal with program specifics	2.78	25.00	22.22	41.67	8.33	36	3.28	1.03
Landowners expect to earn more growing crops on land	2.78	27.78	16.67	47.22	5.56	36	3.25	1.02
Pre-application process is too complex	5.71	17.14	34.29	34.29	8.57	35	3.23	1.03
Landowners believe control over their land would be lost	5.56	41.67	16.67	25.00	11.11	36	2.94	1.17

Table 3.6 Frequencies (%), means ($\bar{x}$), and standard errors (SE) depicting district conservationist responses (*n*) to the statement "Please indicate the extent to which you agree or disagree with the following statements as being indicators of cost-share program success," during the spring of 2007. Items ranked by mean.

Item	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	n	$\bar{x}$	SE
Increased wildlife habitat	0.00	2.78	2.78	55.56	38.89	36	4.31	0.67
Achieving landowner goals	0.00	2.78	5.56	69.44	22.22	36	4.11	0.62
Erosion control	0.00	8.33	5.56	55.56	30.56	36	4.08	0.84
Acreage enrollment	0.00	5.56	16.67	61.11	16.67	36	3.89	0.75
Habitat condition	0.00	2.78	25.00	63.89	8.33	36	3.78	0.64
Increased aesthetic value of land	0.00	8.33	19.44	58.33	13.89	36	3.78	0.80
Water quality measures	2.78	5.56	16.67	63.89	11.11	36	3.75	0.84
Biodiversity (species counts, nest counts)	0.00	11.11	30.56	47.22	11.11	36	3.58	0.84
Tree survival	0.00	25.00	16.67	52.78	5.56	36	3.39	0.93
Air quality measures	8.33	16.67	22.22	50.00	2.78	36	3.22	1.05

Table 3.7 Frequencies (%), means ($\bar{x}$), and standard errors (SE) depicting district conservationist responses (*n*) to the statement "Please indicate the extent to which you agree or disagree with the following statements regarding problems with the delivery of cost-share program aspects," during the spring of 2007. Items ranked by mean.

Item	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	*n*	$\bar{x}$	SE
There is a lack of staff or personnel available to work	2.78	22.22	13.89	36.11	25.00	36	3.58	1.18
Funding available to landowners is insufficient	0.00	22.22	22.22	33.33	22.22	36	3.56	1.08
Landowners lack knowledge concerning program objectives	0.00	27.28	22.22	41.67	8.33	36	3.31	0.98
There is not enough time available for working on programs	5.56	27.78	13.89	38.89	13.89	36	3.28	1.19
Insufficient funds are available to support travel costs	5.56	27.78	38.89	11.11	16.67	36	3.06	1.15
Employee training with regards to program practices has been inadequate	0.00	50.00	22.22	19.44	8.33	36	2.86	1.02

Table 3.8 Frequencies (%), means ($\bar{x}$), and standard errors (SE) depicting district conservationist responses (*n*) to a question regarding problems resulting from a transfer of cost-share program delivery services to a third party technical service provider during the spring of 2007. Items ranked by mean.

Item	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	*n*	$\bar{x}$	SE
Federal employees have doubts regarding TSPs ability to adequately fill this role	0.00	8.33	0.00	41.67	50.00	12	4.33	0.89
There is a lack of program knowledge and awareness among TSPs	0.00	7.69	7.69	53.85	30.77	13	4.07	0.86
Landowners do not trust TSPs	0.00	7.69	30.77	46.15	15.38	13	3.69	0.85
Landowner/client confidentiality is diminished	0.00	15.38	23.08	46.15	15.38	13	3.62	0.96
TSPs have less time and resources available than federal employees	7.69	23.08	0.00	53.85	15.38	13	3.46	1.27
Federal employees experience feelings of alienation from clients	7.69	23.08	7.69	53.85	7.69	13	3.31	1.18

Table 3.9 Frequencies (%), means ($\bar{x}$), and standard errors (SE) depicting district conservationist responses (*n*) to a question regarding benefits resulting from a transfer of cost-share program delivery services to a third party technical service provider during the spring of 2007. Items ranked by mean.

Item	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	*n*	$\bar{x}$	SE
Programs and services available to landowners can be increased	15.38	23.08	15.38	30.77	15.38	13	3.08	1.38
Waiting time for request processing is reduced	15.38	38.46	0.00	30.77	15.38	13	2.92	1.44
Landowners can choose their own provider from a list of eligible providers	15.38	23.08	30.77	30.77	0.00	13	2.77	1.09
Workload of federal agencies is reduced	15.38	38.46	7.69	30.77	7.69	13	2.77	1.30
Landowners are more readily exposed to latest technology	0.00	61.54	15.38	23.08	0.00	13	2.62	0.87

CHAPTER IV

CONCLUDING REMARKS

Many important conclusions can be drawn from a comparison and an individual analysis of my two studies. Results from the private landowner survey indicate high satisfaction levels among cost-share program participants. Respondents reported a high overall satisfaction rating regarding their program arrangement and reported that all of their expectations regarding participating had been exceeded. In addition, there was not a significant difference in the overall satisfaction ratings among the three groups of landowners based on which particular program they were enrolled in (CRP, WRP, WHIP). More than half of the respondents indicated that they had experienced no negative effects on their land as a result of participating and all of the items related to problems encountered during the enrollment process received low average rank scores among participants.

Results from the district conservationist survey indicate that while there were some differences between their responses and those of landowners, these professionals have a fairly good understanding of the motivations held by program participants. The five highest ranking motivations reported by landowners were very similar to those selected by district conservationists. Of these, the response to only one differed significantly between the two groups. I was surprised to find that neither group reported

"hunting opportunities for leasing purposes" as a major motivation behind participating. It is unclear from my study if this result is due to lack of interest or lack of information among landowners regarding fee access wildlife recreation. If natural resource agencies want to boost landowner participation in this practice, then efforts geared towards outreach and marketing of this option need to be implemented.

Results also indicate that district conservationists have a fairly good understanding of the type and amount of problems faced by landowners either on their land or during the enrollment process. Regarding problems participants encounter on their land, response to only two of the ten listed items was dependent on the respondent's status as a landowner or district conservationist. A greater percentage of district conservationists reported both of these items ("too much cropland taken out of production," and "negative effects on local economy") as problems compared to landowners. Concerning problems with the enrollment process, response given to four of the six items differed significantly between the two groups. However, for three out of these four items, the average rank score provided by district conservationists was significantly greater than that of private landowners. These findings suggest that district conservationists may be overestimating amount of difficulty faced by program participants whether on their land or during the enrollment process.

Overall, the system of implementation and overseeing of CRP, WRP, and WHIP in Mississippi appears to be a successful one. Program participants are happy with their program arrangements, and district conservationists have a keen understanding of what participants expect to get out of the programs. District conservationists also have a strong awareness of the types of problems participants encounter, and even overrated certain

issues with the enrollment process. While certain changes within the programs may need to be made to attract more participants, the overall operations with which landowners appear to be satisfied with should not be compromised. However, it is imperative that natural resource agencies maintain accurate and current records of landowner expectations and satisfaction levels which may change over time

APPENDIX A

MISSISSIPPI PRIVATE LANDOWNER STUDY SURVEY

Survey of Mississippi Landowners Concerning Cost-Share Assistance Programs for Wildlife

Conducted for the

Natural Resource Enterprises Program, Dept. of Wildlife and Fisheries,
Mississippi State University

by the

Human Dimensions & Conservation Law Enforcement Laboratory
Forest & Wildlife Research Center
Mississippi State University

2006 SURVEY OF MISSISSIPPI LANDOWNERS ……PAGE 1

The following survey is designed to obtain information about various cost-share assistance programs for wildlife available to private landowners through natural resource agencies. Please answer each of the following questions as completely as possible. Your answers will be grouped with other private landowners on a statewide basis. Your responses will be kept strictly confidential and name and address lists will be destroyed as soon as returns are processed.

1. Are you a participant in any of the following three cost-share assistance programs for wildlife? ***Please circle all that apply.***

1 Conservation Reserve Program (CRP)

2 Wetlands Reserve Program (WRP)

3 Wildlife Habitat Incentives Program (WHIP)

If you circled any of the programs above please go to Question #6.

If you did not circle any of the programs above please go to Question #2.

2. Are you a participant in any of the following cost-share assistance programs which may provide benefits
for wildlife? ***Please circle all that apply.***

1 Conservation of Private Grazing Lands

2 Conservation Security Program

3 Emergency Watershed Protection

4 Environmental Quality Incentives

5 Farm and Ranch Lands Protection

6 Forestry Incentives

7 Grassland Reserve

8 Ground and Surface Water Conservation

9 Healthy Forests Reserve

10 Stewardship Incentives

If you circled any of the programs above please go to Question #24.

If you did not circle any of the programs above please go to Question #3.

3. Are you familiar with cost-share assistance programs for wildlife that are available to landowners through natural resource agencies?

1 YES -- ***Please go to Question #20***
2 NO -- ***Please go to Question #4***

4. Are you interested in learning more about cost-share assistance programs for wildlife?

1 YES – ***Please go to Question #5***
2 NO – ***Please go to Question #24***

5. Can we send you some information in the mail?

1 YES
2 NO

Please go to question #24

6. For each cost-share assistance program you circled in Question #1, please report the number of acres you have enrolled by county.

County	**Program**	**Acres**	**Year Enrolled**
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Please answer the remaining questions based on the program you have been enrolled in the longest (see Question #6).

7. To the best of your knowledge, has staff from the agency responsible (NRCS, FSA) for this program ever inspected management practices implemented on your enrolled acreages?

1 YES
2 NO

8. Which of the following best describes your involvement in this program? **(*Please circle only one answer)***

1 Landowner/operator, actively involved in farming
2 Landowner, but not actively involved in farming
3 Renter and operator, actively involved in farming
4 Trustee
5 Other ***(please specify):***_____

9. How would you best describe your land type prior to enrollment in this program? ***(Please circle only one answer)***

1 Mostly nonnative grasses (e.g. crabgrass, fescue)
2 Mostly native grasses (e.g. bluestem, sedge)
3 Mostly trees
4 Mostly non-grass cropland
5 Mostly wet areas without crops
6 Mostly wet areas with crops (e.g. rice, millet)
7 Other ***(please specify)*:**_____

10. Please indicate how important each of the following reasons was to you when you enrolled your property in this cost-share assistance program for wildlife.

		Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
a)	To establish an additional income source	1	2	3	4	5
b)	To increase wildlife on my property	1	2	3	4	5
c)	To increase hunting opportunities for self/family	1	2	3	4	5
d)	To increase hunting opportunities for leasing purposes	1	2	3	4	5
e)	To do my part in being a good steward of the land	1	2	3	4	5
f)	To restore land to pre-agricultural condition	1	2	3	4	5
g)	To maintain ownership of my land	1	2	3	4	5
h)	To allow me to continue farming my land	1	2	3	4	5
i)	To lower land management costs	1	2	3	4	5
j)	To increase aesthetic appeal of the property	1	2	3	4	5
k)	To control erosion	1	2	3	4	5
l)	To improve water quality	1	2	3	4	5
m)	To reduce dust due to bare ground	1	2	3	4	5
n)	Other*	1	2	3	4	5

*Please specify: _____

If increasing wildlife on your property was an important reason for you to enroll in this cost-share assistance program, what wildlife species were you most interested in increasing? Please list as many as you desire.

_____

_____

_____

11. We just asked you to rate various reasons that influenced your participation in this cost-share assistance program for wildlife. In the following questions, please indicate the extent to which you agree or disagree with the following statements on how it has performed compared to your expectations.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a)	I have established an additional source of income	1	2	3	4	5
b)	I have increased wildlife on my property	1	2	3	4	5
c)	I have increased hunting opportunities for self/family	1	2	3	4	5
d)	I have increased hunting opportunities for leasing purposes	1	2	3	4	5
e)	I believe I have become a better steward of the land	1	2	3	4	5
f)	I have restored land to pre-agricultural condition	1	2	3	4	5
g)	I have maintained ownership of my land	1	2	3	4	5
h)	I have been able to maintain farming practices on my land	1	2	3	4	5
i)	I have seen a decrease in my land management costs	1	2	3	4	5
j)	I have increased aesthetic appeal of the property	1	2	3	4	5
k)	I have seen a reduction in erosion	1	2	3	4	5
l)	I have seen improvements in water quality	1	2	3	4	5
m)	I have seen a reduction in dust due to bare ground	1	2	3	4	5
n)	Other*	1	2	3	4	5

*Please specify: _____

12. What negative impacts (if any) to your land have you observed as a result of enrolling in this cost-share program for wildlife?

1 No negative effects have been observed – ***Please go to Question #13***
2 Too much cropland taken out of production
3 Negative effects on local economy
4 Attracts unwanted wildlife
5 Attracts unwanted requests for permission to hunt
6 Source of weeds
7 Potential fire hazard
8 Makes farm appear unkempt or poorly managed
9 Causes problems with neighbors
10 Other ***(please specify.)***_____

13. Please indicate the extent to which you agree or disagree with the following statements regarding enrollment issues with this cost-share assistance program for wildlife.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a)	Eligibility requirements were too strict	1	2	3	4	5
b)	There was a lack of communication between me and agency personnel	1	2	3	4	5
c)	Inadequate information sources were available	1	2	3	4	5
d)	The application process was too complex	1	2	3	4	5
e)	There was a lack of agency personnel available to assist me	1	2	3	4	5
f)	Management practices for me to undertake were unclear	1	2	3	4	5
g)	Other*	1	2	3	4	5

*Please specify: _____

14. Of the issues listed in Question #13, which (if any) did you find to be the single most difficult aspect in participating in this cost-share assistance program for wildlife? ***(Please circle only one)***

a b c d e f g

	Not at all Difficult	Slightly Difficult	Moderately Difficult	Very Difficult	Extremely Difficult
15. Overall, how difficult was the process of participating in this cost-share assistance program	1	2	3	4	5

	Not at all Satisfied	Slightly Satisfied	Moderately Satisfied	Very Satisfied	Extremely Satisfied
16. Overall, how satisfied are you with this cost-share assistance program arrangement	1	2	3	4	5

17. Would you enroll more of your property in this program if given the opportunity?

1 YES
2 NO

18. Would you encourage other landowners to participate in this cost-share assistance program for wildlife?

1 YES
2 NO

19. Please indicate how effective you believe each of the following would be in encouraging other landowners to participate in this cost-share assistance program for wildlife.

		Not at all Effective	Slightly Effective	Moderately Effective	Very Effective	Extremely Effective
a)	More money/acre	1	2	3	4	5
b)	More technical assistance	1	2	3	4	5
c)	More enrollment options	1	2	3	4	5
d)	Longer contract duration	1	2	3	4	5
e)	Longer sign-up period	1	2	3	4	5
f)	More interaction between landowner and agency personnel	1	2	3	4	5
g)	Making programs more simple to understand	1	2	3	4	5
h)	Increased publicity/marketing of available programs	1	2	3	4	5
i)	Other*	1	2	3	4	5

*Please specify: _____

Please go to Question #24 to continue.

20. We are interested in determining reasons why people do not participate in cost-share assistance programs that provide benefits for wildlife. Please indicate the extent to which you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) Cost-share programs do not offer enough financial incentive	1	2	3	4	5
b) I expect to earn more growing crops on my land	1	2	3	4	5
c) I believe control over my land would be lost	1	2	3	4	5
d) I do not want the hassle of working with federal government on cost-share acres	1	2	3	4	5
e) Long-term easements on cost-share acres are troublesome	1	2	3	4	5
f) I do not want future owners (heirs) to have to deal with program practices	1	2	3	4	5
g) I have goals that are different from those of the cost-share program	1	2	3	4	5
h) I do not know enough about cost-share assistance programs	1	2	3	4	5
i) Pre-application process is too complex	1	2	3	4	5
j) Other*	1	2	3	4	5

*Please specify: _____

21. Of the possibilities listed in Question #20, which (if any) was the single most important reason in your decision NOT to participate in a cost-share assistance program? ***(Please circle only one)***

a b c d e f g h i j

22. Do you believe there is any possibility of you enrolling or attempting to enroll your land in the future?

1 YES
2 NO

23. What, if anything, would encourage you to participate in a cost-share assistance program for wildlife? Please use the space below to provide us with your thoughts.

_____

_____

The following questions will help us to know more about private landowners enrolled in cost-share assistance programs. The information you provide will remain strictly confidential and you will not be identified with your answers.

24. What is your age?

_____ YEARS

25. What is your gender?

1 MALE
2 FEMALE

26. What is your approximate annual **household** income before taxes?

1. Under $20,000
2. $20,000 - $39,999
3. $40,000 - $59,999
4. $60,000 - $79,999
5. $80,000 - $99,999
6. $100,000 - $119,999
7. $120,000 - $139,999
8. $140,000 - $159,999
9. $160,000 - $179,999
10. $180,000 - $199,999
11. $200,000 - ABOVE

27. What is the highest educational level you have attained? ***(Please circle only one number)***

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22+
Elementary High School College Graduate School

28. What is your ethnic background? ***(Please circle only one)***

1 WHITE OR ANGLO
2 BLACK OR AFRICAN AMERICAN
3 NATIVE AMERICAN OR ALASKAN NATIVE
4 ASIAN OR PACIFIC ISLANDER
5 HISPANIC
6 OTHER ***(Please specify: _____)***

29. Was this survey completed by the person to whom it was addressed?

1 YES
2 NO

Is there anything you would like to share with NRCS or FSA regarding cost-share assistance programs?

Please use the space below to provide us with any further thoughts or suggestions you may have concerning cost-share assistance programs in Mississippi.

Your contribution of time to this study is greatly appreciated. Please return your completed questionnaire in the postage paid business reply envelope as soon as possible. Thank You.

Mississippi State University
Department of Wildlife and Fisheries
Mississippi State, MS 39762-9690
5/06

APPENDIX B

MISSISSIPPI DISTRICT CONSERVATIONIST STUDY SURVEY

The following survey is designed to obtain information regarding various cost-share assistance programs for wildlife that are available to private landowners. Please answer each of the following questions as completely as possible. Your answers will be grouped with other district conservationists on a statewide basis. Your answers will be kept strictly confidential and name and email address lists will be destroyed as soon as returns are processed.

1. Please indicate which of the following cost-share programs you oversee or have dealings with. (please circle all that apply)

1 Conservation Reserve Program (CRP)

2 Wetlands Reserve Program (WRP)

3 Wildlife Habitat Incentives Program (WHIP)

2. Please report the number of acres enrolled in each program in your respective county (ies).

County	Program	Acres
_____	CRP	_____
	WRP	_____
	WHIP	_____
_____	CRP	_____
	WRP	_____
	WHIP	_____
_____	CRP	_____
	WRP	_____
	WHIP	_____

3. Based on your experience, how important do you believe each of the following reasons is in a landowner's decision to enroll property in a cost-share assistance program.

	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
a) To establish an additional source of income……..	1	2	3	4	5
b) To increase wildlife on property	1	2	3	4	5
c) To increase hunting opportunities for self/family.....	1	2	3	4	5
d) To increase hunting opportunities for leasing purposes	1	2	3	4	5
e) To do their part in being a good steward of the land	1	2	3	4	5
f) To restore land to pre-agricultural condition.....	1	2	3	4	5
g) To maintain ownership of their land.....	1	2	3	4	5
h) To be able to continue farming their land.....	1	2	3	4	5
i) To lower land management costs	1	2	3	4	5
j) To increase aesthetic appeal of the property.....	1	2	3	4	5
k) To control erosion	1	2	3	4	5
l) To improve water quality	1	2	3	4	5
m) To reduce dust due to bare ground	1	2	3	4	5
n) Other*.....	1	2	3	4	5

*Please specify:_____

4. What wildlife species do you believe landowners in your county (ies) are most interested in increasing?

_____ SPECIES MOST INTERESTED IN INCREASING

_____ SPECIES SECOND MOST INTERESTED IN INCREASING

_____ SPECIES THIRD MOST INTERESTED IN INCREASING

5. In your experience, which of the following negative impacts (if any) have landowners faced as a result of participation in a cost-share assistance program? **(Circle all that apply.)**

1 No negative effects have been reported – Please go to Question #6
2 Too much cropland taken out of production
3 Negative effects on local economy
4 Attracts unwanted wildlife
5 Attracts unwanted requests for permission to hunt
6 Source of weeds
7 Potential fire hazard
8 Makes farm appear unkempt or poorly managed
9 Causes problems with neighbors
10 Other **(please specify):**_____

6. From your agency's perspective, please indicate the extent to which you agree or disagree with the following statements regarding possible problems with delivery of cost-share assistance program aspects.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) There is not enough time available for working on programs	1	2	3	4	5
b) There is a lack of staff or personnel available to work	1	2	3	4	5
c) Insufficient funds are available to support travel costs	1	2	3	4	5
d) Funding available to landowners is insufficient	1	2	3	4	5
e) Employee training with regards to program practices has been inadequate	1	2	3	4	5
f) Landowners lack knowledge concerning program objectives	1	2	3	4	5
g) Other*	1	2	3	4	5

*please specify:_____

7. Please indicate the extent to which you agree or disagree with each of the following measures as being indicators of cost-share assistance program success.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) Acreage enrollment	1	2	3	4	5
b) Habitat condition	1	2	3	4	5
c) Tree survival	1	2	3	4	5
d) Achieving landowner goals	1	2	3	4	5
e) Water quality measures	1	2	3	4	5
f) Air quality measures	1	2	3	4	5
g) Biodiversity (species counts, nest counts, etc.)	1	2	3	4	5
h) Erosion control	1	2	3	4	5
i) Increased wildlife habitat	1	2	3	4	5
j) Increased aesthetic value of land	1	2	3	4	5
k) Other*	1	2	3	4	5

*please specify:_____

8. Based on your experience, please indicate the extent to which you agree or disagree with the following statements regarding problems landowners face in participating in cost-share assistance programs.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) Eligibility requirements are too strict	1	2	3	4	5
b) There is a lack of communication between landowners and agency personnel	1	2	3	4	5
c) Inadequate information sources are available to Landowners	1	2	3	4	5
d) The application process is too complex	1	2	3	4	5
e) There is a lack of agency personnel available to assist landowners	1	2	3	4	5
f) Management practices for landowners to undertake are unclear	1	2	3	4	5
g) Other*	1	2	3	4	5

*Please specify:_____

9. Of the issues listed in Question #8, which (if any) do you believe to be the single most difficult aspect landowners face in participating in a cost-share assistance program? ***(Please circle only one)***

a b c d e f g

10. Please indicate how effective you think each of the following would be in encouraging landowners to participate in cost-share assistance programs.

	Not at all Effective	Slightly Effective	Moderately Effective	Very Effective	Extremely Effective
a) More money/acre	1	2	3	4	5
b) More technical assistance	1	2	3	4	5
c) More enrollment options	1	2	3	4	5
d) Longer contract duration	1	2	3	4	5
e) Longer sign-up period	1	2	3	4	5
f) More interaction between landowner and agency personnel	1	2	3	4	5
g) Increased publicity/marketing of available programs	1	2	3	4	5
h) Other*	1	2	3	4	5

*Please specify:_____

11. We are interested in your perceptions of why some landowners choose not to participate in cost-share assistance programs that provide benefits for wildlife. Based on your experiences, please indicate the extent to which you agree or disagree with the following statements.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a)	Cost-share assistance programs do not offer enough financial incentive	1	2	3	4	5
b)	Landowners expect to earn more growing crops on land	1	2	3	4	5
c)	Landowners believe control over their land would be lost	1	2	3	4	5
d)	Landowners do not want the hassle of working with the federal government on cost-share acres	1	2	3	4	5
e)	Long-term easements on cost share acres are troublesome	1	2	3	4	5
f)	Landowners do not want future owners (heirs) to have to deal with program specifics	1	2	3	4	5
g)	Landowners have goals that are different from those listed within cost-share programs	1	2	3	4	5
h)	Landowners do not know enough about cost-share assistance programs	1	2	3	4	5
i)	Pre-application process is too complex	1	2	3	4	5
j)	Other*	1	2	3	4	5

*Please specify:_____

**Concerning the delivery of technical assistance through a cost-share program, there has been in recent years a noticeable shift from delivery of services by federal employees to delivery of services by the private sector.

12. In your dealings with cost-share programs, have you or your organization had to transfer delivery services to a third party technical service provider (TSP)?

1 YES -- ***Please go to Question #13***
2 NO -- ***Please go to Question #15***

13. Based on your experiences, please indicate the extent to which you agree or disagree with the following statements regarding realized problems resulting from this change in delivery services.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) Landowner/client confidentiality is diminished	1	2	3	4	5
b) There is a lack of program knowledge and awareness among TSPs	1	2	3	4	5
c) Landowners do not trust TSPs	1	2	3	4	5
d) TSPs have less time and resources available than federal employees	1	2	3	4	5
e) Federal employees experience feelings of alienation from clients	1	2	3	4	5
f) Federal employees have doubts regarding TSPs ability to adequately fill this role	1	2	3	4	5
g) Other**	1	2	3	4	5

**Please specify:_____

14. Again, based on your experiences, please indicate the extent to which you agree or disagree with the following statements regarding realized benefits resulting from this change in delivery services.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a)	Programs and services available to landowners can be increased	1	2	3	4	5
b)	Waiting time for request processing is reduced	1	2	3	4	5
c)	Workload of federal agencies is reduced	1	2	3	4	5
d)	Landowners are more readily exposed to latest technology	1	2	3	4	5
e)	Landowners can choose their own provider from a list of eligible providers	1	2	3	4	5
f)	Other**	1	2	3	4	5

**Please specify:_____

15. Is there anything further you would like to share with us regarding cost-share assistance programs available to private landowners?