A Study of Waterfowl Hunters at the Monsanto Farm and Wildlife Management Center

Prepared for the Monsanto Company

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Executive Summary

The study site was visited by 311 individuals, 187 (60.1%) of which agreed to participate in the study and completed the pre-hunt questionnaire. Of the 187 participants, 148 (79.1%) individuals responded to the post-hunt questionnaire. Five questionnaires were non-eligible (i.e., participants were less than 18 years old or indicated the questionnaire was completed by another person) and removed from the dataset, leaving 143 usable questionnaires from 182 eligible participants of the pre-hunt questionnaire for an effective mailing response rate of 78.6%.

Demographic Characteristics of Survey Participants

- Most participants were "White or Anglo" (99.3%) and male (97.9%).
- Most (73.5%) participants were between 31-55 years of age. The mean age was 44.5 years.
- A majority of participants (57.3%) had an approximate gross annual household income of \$100,000 and above.
- Most participants (86%) had some college or graduate level education.

Hunting Characteristics of Survey Participants

- Survey participants had an average of 15.3 years of waterfowl hunting experience.
- Most (51.8%) rated hunting as their "most important" outdoor recreation activity. Hunting was rated as their "second most important" outdoor recreation activity by 24.1%, "third most important" by 15.6%, and "none of the above" by 8.5% of survey respondents.
- Most participants rated waterfowl hunting as either their "most important" (25.5%) or "second most important" (38.3%) hunting activity. Waterfowl hunting was rated as the "third most important" hunting activity by 22.7% of respondents and 13.5% of respondents indicated the importance of waterfowl hunting as "none of the above."
- Hunters spent an average of 3.22 days duck hunting in Arkansas and 6.29 days hunting outside of Arkansas.

- One-half of the participants indicated the 2005-06 waterfowl hunting season was an "average" year in terms of days hunted. Whereas 27.1% reported the 2005-06 season as being a "below average" year and 22.9% indicated it was an "above average" year in terms of days hunted.
- A plurality (41.7%) indicated that the 2005-06 waterfowl hunting season was an "average" year in terms of waterfowl harvested. Whereas 28.8% reported the 2005-06 season as being a "below average" year and 29.5% indicated it was an "above average" year in terms of waterfowl harvested.

Trip Expectations and Satisfactions of Survey Participants

- Expectations were greatest for the variables of "The property will be well-kept," "I will receive quality service at the club house," "The club house will be well-kept," and "I will hunt in well-managed habitat."
- Performance was greatest for the variables of "I received quality service at the club house," "The property was well-kept," "High quality meals were provided at the club house," and "The club house was well-kept."
- Expectations were exceeded for 28%, met for 40%, and not met for 32% of the 25 items measured.
- The largest negative difference scores (not meeting expectations) were for the items of "I tested my waterfowl hunting skills," "I worked a lot of ducks," and "I saw a variety of wildlife in addition to waterfowl."
- The largest positive difference scores (expectations were exceeded) were for the items of "Other parties interfered with my hunt" (this item was reverse coded, indicating parties did not interfere with one another), "High quality meals were provided at the club house," and "I received quality service at the club house."
- Mean satisfaction scores were greatest for satisfaction with "The service overall," "The property overall," and "The people in your hunting party."
- Mean satisfaction scores were lowest for satisfaction with "Your harvest," "The available hunting opportunities," and "The location(s) you hunted."
- The difference scores (Performance Expectations = Difference Score) for the variables of "I worked a lot of ducks," "I hunted in a pristine environment," "I harvested a sufficient number of ducks," and "I was placed in the best available hunting location" were among the strongest correlates with overall trip satisfaction.

- The performance only scores for the variables of "I worked a lot of ducks," "I was placed in the best available hunting location," "I tested my waterfowl hunting stills," and "I hunted in a pristine environment" were among the strongest correlates with overall trip satisfaction.
- When participants were asked "to list other activities (hunting or otherwise) that you would like to see the Monsanto Farm and Wildlife Management Center offer in the future," a plurality (46.3%) of responses fell into the "Trap, skeet, or sporting clays" category, followed by 14.7% of item participants wanting to goose hunt.

Economic Valuation for Survey Participants

- Survey participants traveled an average of 518 one-way miles, hunted an average of 2.08 days, and stayed an average of 0.46 additional days in Arkansas during their trip to the Monsanto property.
- Participants spent and average of \$255.99 in Arkansas County, an average of \$150.68 elsewhere in Arkansas, and \$165.69 outside of Arkansas on their trip.
- Survey participants were willing to pay an average of \$359.35 over the cost they already paid before they would not have made the trip.

Discussion and Managerial Recommendations

- Participants had relatively high expectations for quality service and well-kept facilities. However, the staff at the Monsanto Farm and Wildlife Management center were able to exceed those expectations. Consequently, survey participants reported great levels of satisfaction for items related to those aspects of their trip. Conversely, items related to service quality and well-kept facilities correlated relatively poorly with overall trip satisfaction when compared to other items, meaning they did not weigh heavily in hunters' evaluation of trip satisfaction.
- Although most of the service-related items correlated relatively poorly with overall trip satisfaction, most were significantly related for both the performance only and the difference score correlations. Thus, it is advisable to maintain the current standard of quality for these trip aspects to assure good visitor satisfaction levels.
- Working a lot of ducks, being placed in the best available hunting location, and hunting in a pristine environment were among the strongest correlates to overall trip satisfaction. Although mean satisfaction scores for harvest and hunting locale were quite good, they were among the lowest when compared to the other overall evaluations of satisfaction. Furthermore, expectations were not met for the items of "I worked a lot of ducks" or "I hunted in a pristine environment."

- The mean score for overall trip satisfaction was 4.44, indicating that on average participants rated their trip between "very satisfied" and "extremely satisfied." Not meeting participant expectations for working a lot of ducks or hunting in a pristine environment, coupled with the fact that those items were among the strongest correlates with overall trip satisfaction, suggests that effort to improve these aspects of the trip could increase visitor satisfaction ratings even further.
- Items where expectations were not met and that strongly correlated with overall trip satisfaction warrant the most management effort to improve satisfaction ratings. Thus, improving natural habitats and managing hunting pressure to attract and hold more ducks could lead to improved trip satisfaction ratings. This would allow clients to work the most possible ducks, be in a pristine environment, and test their waterfowl hunting skills.

Acknowledgements

Financial support for this report was provided by the U. S. Department of the Interior – United States Fish and Wildlife Service, Natural Resource Enterprises. We would like to thank all of the staff at the Monsanto Farm and Wildlife Management Center for their help distributing surveys to guests invited to the property, especially Mr. Ray Bohanan, Mr. Shane Roethle, and Dr. John Anderson. Further thanks go to Brittany Harris, Elizabeth Kirk, and Mallory Sullivan in the Human Dimensions and Conservation Law Enforcement Laboratory for their help with data entry and questionnaire mailings.

Table of Contents

Executive Summary	i
Acknowledgements	iv
Table of Contents	v
List of Figures in Text	vi
List of Tables in Text	vi
List of Tables for all Survey Results	vii
Introduction	1
Rationale for Methodology	2
Methods	4
Results	7
Discussion	14
Literature Cited	15
APPENDIX A: Pre-survey Flyer	18
APPENDIX B: Pre-survey Questionnaire	20
APPENDIX C: Post-survey Questionnaire	25
APPENDIX D: Post-survey Letters Accompanying Questionnaire Mailings	34
APPENDIX E: Response Rate and State of Residence Tables	38
APPENDIX F: Tables for Pre-survey Results	40
APPENDIX G: Open-ended Comments from Pre-survey	43
APPENDIX H: Tables for Post-Survey Results	47
APPENDIX I: Open-ended Comments from Post-survey	64

List of Figures in Text

Figure 1.	The response rates to the follow-up mail survey $(n = 187)$ 7
Figure 2.	The percent of ages reported by survey participants (Mean = 44.5)
Figure 3.	The percent of individuals by state of residence that responded to the follow-up mail survey
Figure 4.	Percent of years waterfowl hunted among participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 15.3 years)
Figure 5.	A list of activities visitors to the Monsanto Farm and Wildlife Management Center would like to see offered in the future. Other activities include: Rice field duck hunting, upland bird hunting, afternoon duck hunting, and provide more information for offsite entertainment activities

List of Tables in Text

Table 1.	Means for item expectations, performance, and difference scores for	
	participants who filled out both the pre- and post-questionnaires during the	
	2005-06 waterfowl hunting season; sorted by difference score. Items were	
	classified as exceeding expectations, meeting expectations, or not meeting	
	expectations based on the 95% confidence intervals around the mean	
	difference score (n = 140) 12	3

List of Tables for all Survey Results

Table E1.	The percent and frequency for response categories for the follow-up mail survey
Table E2.	The percent and frequency of respondents to the follow-up survey for each mailing wave
Table E3.	The percent and frequency of individuals by state of residence that responded to the follow-up mail survey
Table F1.	The percent and frequency of respondents that completed both the pre- and post-questionnaires who indicated they made a trip to the Monsanto property already during the 2005-06 waterfowl hunting season in the pre-survey
Table F2.	The percent and frequency of trips to the Monsanto property during the 2005-06 waterfowl hunting season, as reported by those who completed both the pre- and post-questionnaires
Table F3.	The percent and frequency of respondents indicating they were going to participate in a waterfowl hunt in the pre-survey, as reported by those who completed both the pre- and post-questionnaires
Table F4.	The percent and frequency of days respondents to both the pre- and post-questionnaires indicated they were going to waterfowl hunt on their trip in the pre-questionnaire
Table F5.	Percent and means for each of the 25 items related to trip expectations for participants who filled out both the pre- and post-questionnaires for the 2005-06 waterfowl hunting season ($n = 143$)
Table F6.	The percent and frequency of those who indicated they had something else to share in the open ended comments about waterfowl hunting or management at the Monsanto property. The open ended comments are typed in Appendix G
Table H1.	The percent and frequency of participants who indicated they participated in a waterfowl hunt on the Monsanto property during the 2005-06 waterfowl hunting season on the post-questionnaire
Table H2.	The average number of ducks and geese personally harvested during a trip to the Monsanto property for the 2005-06 waterfowl hunting season

Table H3.	The average number of ducks and geese harvested by each hunting party during a trip to the Monsanto property for the 2005-06 waterfowl hunting season	48
Table H4.	The percent and frequency of participants who indicated they hunted the Monsanto property prior to the 2005-06 waterfowl hunting season	48
Table H5.	The percent and frequency of years hunted at the Monsanto property among those who indicated they have hunted the property prior to the 2005-06 waterfowl hunting season. (Mean = 4.5 years, including the 2005-06 season)	48
Table H6.	The percent and frequency of years waterfowl hunted among participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 15.3 years)	49
Table H7.	The percent and frequency of how participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season rated hunting compared to their other outdoor recreation activities (such as fishing, camping, golfing, etc.)	49
Table H8.	The percent and frequency of how participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season rated waterfowl hunting compared to their other hunting activities	49
Table H9.	A matrix comparing how participants rated the importance of waterfowl hunting compared to other types of hunting by the importance of hunting compared to other outdoor recreational activities $(n = 141)$	50
Table H10.	The percent and frequency of days hunted in Arkansas by survey participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 3.22 days)	50
Table H11.	The percent and frequency of days hunted outside of Arkansas by survey participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 6.29 days)	50
Table H12.	The percent and frequency of days hunted on state wildlife management areas by survey participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 0.60 days)	50
Table H13.	The percent and frequency of days hunted on other types of public land by survey participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 0.75 days)	51

Table H14.	The percent and frequency of days hunted on private land with a guide by survey participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 1.91 days)	51
Table H15.	The percent and frequency of days hunted on private land without a guide by survey participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 5.95 days)	51
Table H16.	The percent and frequency of how survey participants compared the 2005-06 waterfowl hunting season to what they would consider and "average year" in terms of days hunted	51
Table H17.	The percent and frequency of how survey participants compared the 2005-06 waterfowl hunting season to what they would consider and "average year" in terms of waterfowl harvested	52
Table H18.	The percent and means for each of the 25 items related to the fulfillment of trip expectations for participants who filled out both the pre- and post-survey for the 2005-06 waterfowl hunting season	52
Table H19.	The percent and means for the difference scores for each of the 25 items related to expectations for a trip to the Monsanto property during the 2005-06 waterfowl hunting season	53
Table H20.	Means for item expectations, performance, and difference scores for participants; sorted by difference scores. Items were classified as positive disconfirmation, confirmation, or negative disconfirmation based on the 95% confidence intervals around the mean difference score ($n = 140$)	55
Table H21.	The results of difference scores correlated with overall trip satisfaction; sorted by Spearman's rho ($n = 141$)	56
Table H22.	The results of performance only items correlated with overall trip satisfaction; sorted by Spearman's rho $(n = 141)$	57
Table H23.	The percent for each satisfaction level of participants; ranked by mean satisfaction ($n = 142$)	58
Table H24.	The percent and frequency of responses from participants who suggested other activities they would like to see offered at the Monsanto property in the future; sorted by frequency	59
Table H25.	Means for how many one-way miles participants traveled to get to the Monsanto property	59

Table H26.	Means for how many days spent hunting in Arkansas on this trip to the Monsanto property for survey participants	59
Table H27.	Means for how many additional days spent in Arkansas as a result of this trip to the Monsanto property for survey participants	59
Table H28.	Mean expenditures for all participants, where missing values were replaced with zero ($n = 143$)	60
Table H29.	Mean expenditures for non-residents of Arkansas, where missing values were replaced with zero ($n = 136$)	60
Table H30.	Mean expenditures for residents of Arkansas, where missing values were replaced with zero $(n = 7)$	61
Table H31.	Mean expenditures for participants who had an expenditure listed for the category for all participants	61
Table H32.	Mean expenditures that occurred outside of Arkansas for a trip to the Monsanto property by both non-residents and all participants grouped	62
Table H33.	Mean dollar amount that participants were willing to pay over what they expended for the trip before they would not have made the trip (n $= 91$)	62
Table H34.	The percent and frequency of ages reported by survey participants (Mean = 44.5)	62
Table H35.	The percent and frequency of gender reported by survey participants	62
Table H36.	The percent and frequency of the approximate annual household income before taxes reported by participants	63
Table H37.	The percent and frequency of the greatest level of education attained for survey participants	63
Table H38.	The percent and frequency of ethnic backgrounds for survey participants	63
Table H39.	The percent and frequency of participants who indicated they had something else to share about waterfowl hunting or management at the Monsanto Farm and Wildlife Management Center. The open ended comments are typed in Appendix I	63

INTRODUCTION

The Monsanto Farm and Wildlife Management Center is a 1,214 hectare (3,000 acres) working farm with approximately 384 hectares (950 acres) of floodable forestland. The property is located in Arkansas's Grand Prairie region, approximately eight kilometers (5 miles) south of Stuttgart, Arkansas -- "The Rice and Duck Capital of the World." The original owners purchased the property with the intentions of developing its duck hunting potential. Subsequent owners added a hunting lodge and outbuildings. The Monsanto Company purchased the property from the Hartz Seed Company in 1985. The property currently functions as an agricultural and wildlife management demonstration area in addition to providing waterfowl hunting opportunities to guests. Although the Monsanto Company has owned the property for over 20 years, no research has been done on the waterfowl hunting clienteles' demographics, expectations, satisfactions, and preferences on amenities for the property.

To effectively manage a wildlife-based business, it is important for managers to know as much about their hunting clientele as possible. Thus, in addition to assessing the more pointed questions a manager may have about the preferences and satisfactions of their customers, this survey was designed to provide a demographic profile of the Monsanto Farm and Wildlife Management Center's clients. Understanding the influences on visitor satisfaction is important for corporations because satisfied customers may encourage others to visit, visit again in the future, or say positive things about the area to other potential customers (Tian-Cole et al. 2002). Further, satisfied customers have been shown to be willing to pay more for goods or services (Homburg et al. 2005). Measuring a customer's expectations and degree of fulfillment of expectations will help managers know more precisely where to concentrate efforts to improve overall satisfaction. Assessing the economic impact of a wildlife based business to the

surrounding community is important because it offers additional justification for the operations of such businesses. Therefore, this study was also designed to gather expenditure data from visitors to the property.

The objectives of our study were to gain a better understanding of waterfowl hunters using the Monsanto Farm and Wildlife Management Center by examining: 1) their expectations for various hunting and non-hunting aspects of a specific trip, 2) their perceived performance for each aspect of their trip, 3) if expectations were met for their trip, 4) their overall evaluation of satisfaction for various aspects of their trip, 5) what aspects correlated the greatest with an overall evaluation of satisfaction with the trip, 6) their preferences for amenities at the property, 7) guest expenditures, and 8) demographic characteristics of guests.

RATIONALE FOR METHODOLOGY

Much research has been done on hunter satisfaction in the literature. However, the aspects of the hunt that influence satisfaction the most vary among studies. Both success related factors (e.g., harvest or getting shots) and nonsuccess aspects (e.g., getting outdoors or getting close to nature) play an important role in hunter satisfaction (Stankey et al. 1973, Gigiliotti 2000, Hayslette et al. 2001). However, some studies have shown that successful hunters reported greater levels of satisfaction than unsuccessful ones (Vaske et al. 1982, Gigliotti 2000). Although hunting is more than just harvesting animals (Hendee 1974), the opportunity of harvest certainly plays an important role in hunter satisfaction (Decker et al. 1980, Miller and Graefe 2001). Unfortunately for managers, harvest is often a goal that hunters have the least control in achieving and may report lower levels of satisfaction than participants in a nonconsumptive recreational activity (Vaske et al. 1982). Thus, hunter satisfaction is a multifaceted concept that

depends on both the participant and the recreational setting (Vaske et al. 1986, Manning 1999, Frey et al. 2003).

Researchers have defined recreational satisfaction as the difference between the outcomes one desires and the perceived fulfillment of those outcomes (Ditton et al. 1981, Holland and Ditton 1992). Given this definition, it is plausible that hunters will formulate expectations of how well their desired outcomes will be fulfilled prior to their hunting experience. Some authors have suggested that expectations may play a role in hunter satisfaction judgments (Vaske et al. 1986, Hammitt et al. 1990, Decker et al. 1980). However, empirical evidence of how expectations relate to hunter satisfaction is lacking in the literature. The method of addressing the relationship between expectations and satisfactions lies in the expectancy disconfirmation paradigm.

The expectancy disconfirmation paradigm has been studied extensively in consumer satisfaction research (Oliver 1980, Tse and Wilton 1988, Niedrich et al. 2005). In this paradigm, disconfirmation occurs when there is a difference between one's expectations and the reality of the experience (Oliver and DeSarbo 1988, Burns et al. 2003). Negative disconfirmation occurs when reality is worse than expectations, positive disconfirmation occurs when reality is better than expectations, and confirmation occurs when reality matches expectations (Oliver 1980). The consumer satisfaction literature has generally shown that when positive disconfirmation occurs satisfaction ratings are greater than when negative disconfirmation occurs (Tse and Wilton 1988, Spreng et al. 1996). One method of measuring disconfirmation is via a difference score; where a measure of expectations is arithmetically subtracted from a measure performance (Parasuraman et al. 1988). Although some debate surrounds the use of difference scores as predictors of satisfaction or service quality (Cronin and Taylor 1992, Cronin and Taylor 1994,

Parasuraman et al. 1994), their use may still be practical for identifying deficient areas and tracking expectations over time (Parasuraman et al.1994, Crompton and Love 1995).

Several types of expectations have been defined and studied in expectancy disconfirmation research, but the standards of predictive and normative expectations are most prevalent (Boulding et al. 1993, Niedrich et al. 2005). Predictive expectations are a consumer's expectations of what "will" happen during their next encounter with a firm and normative expectations are expectations of what consumers feel "should" happen during their next encounter with a firm (Boulding et al. 1993). Boulding et al. (1993) further conceptualized that predictive and normative expectations are not static and will change over time with additional contacts with a firm. Predictive expectations have typically been used in satisfaction research, while normative expectations have been used in service quality research (Boulding et al. 1993). In this study, we used difference scores (Performance – Expectations = Difference score) to identify areas where the Monsanto property may not be meeting guests' predictive expectations.

METHODS

Pre-survey Implementation and Design

Monsanto staff members distributed an informational flyer (Appendix A) with a voluntary 4-page pre-hunting experience survey (Appendix B) while guests' licenses were processed. In the pre-survey, we asked that participants provide their name and address, and using a 5-point Likert-type scale (1 = "Strongly Disagree," 2 = "Disagree," 3 = "Neutral," 4 = "Agree," 5 = "Strongly Agree"), rate how strongly they agreed or disagreed with a series of statements about their expectations. Expectations were related to three aspects of their trip to the property: 1) hunting experience, 2) service from the staff, and 3) impressions of the facilities. Following Niedrich et al. (2005) and Boulding et al. (1993), we operationalized these predictive

expectations with the term "will" being used in each predictive statement. After participants completed the pre-questionnaires, they were placed in a locked ballot box until retrieved by researchers.

Post-survey Implementation and Design

We mailed an 8-page post-hunting experience questionnaire (Appendix C) to participants of the pre-survey after the duck hunting season to determine how well expectations were fulfilled during their trip. We used techniques modified from Dillman (1978) for mailing the postquestionnaires. One week after the duck season, we mailed the first post-questionnaires with a detailed cover letter (Appendix D) and a postage paid business reply envelope. Three weeks later, we directed a second mailing toward each non-respondent with a reminder letter, replacement questionnaire, and postage paid business reply envelope. Four weeks after the second contact, we mailed non-respondents a final questionnaire, reminder letter, and postage paid business reply envelope. We included all questionnaires received within six weeks of the final mailing in data analyses.

The post-questionnaire consisted of a reworded series of questions to gauge the fulfillment of guest expectations, using the same response format as the pre-survey. We used these data to compute difference scores to identify guest expectation fulfillment and where possible service shortfalls existed on the property. The post-questionnaire also had components on harvest, waterfowl hunting participation, satisfaction, trip expenditures, suggestions for managing the property, and hunter demographics. Another survey component asked hunters to rate their satisfaction with specific aspects of their waterfowl hunting trip using a 5-point satisfaction continuum with a response format of 1 = "Not at all Satisfied," 2 = "Slightly Satisfied," 3 = "Moderately Satisfied," 4 = "Very Satisfied," and 5 = "Extremely Satisfied."

Satisfaction items related to several trip aspects and to their overall trip experience. We pretested survey instruments during the 2004-05 waterfowl hunting season on 94 individuals. Based on the pre-test, we slightly reworded questionnaire items to alleviate ambiguity and reorganized items to improve item non-response.

Data Analyses

After we received questionnaires, they were coded, data entered, checked for errors, and analyzed. We calculated difference scores based on Parasuraman et al.'s (1988) work on service quality. We derived difference scores by subtracting participants' performance ratings from their expectations ratings for each item related to their trip. Difference scores with a negative value indicated that a participant's expectations were not met and that negative disconfirmation occurred. We used 95% confidence intervals to determine if scores varied significantly from zero and then assigned an item to either positive disconfirmation (exceeded expectations), confirmation (met expectations), or negative disconfirmation (did not meet expectations). The relative importance of each item to overall satisfaction was measured using Spearman's rho, because the data being analyzed were ordinal (Schlotzhauer and Littell 1997). We correlated both performance only items and difference scores with overall satisfaction to determine if guest satisfaction was a function of fulfilled expectations. We used means and frequencies for the analyses of other variables. We used alpha = 0.05 for significance testing throughout this study.

Non-response Analyses

We made no effort to contact individuals for a non-response survey who did not participate in the pre-survey. We used a Wilcoxon Rank Sum test to determine if expectations differed between those who filled out a pre-questionnaire and post-questionnaire and those who filled out only a pre-questionnaire. To check for possible non-response biases we made the

assumption that each mailing wave probed deeper into the core of non-respondents (Filion 1975). Thus, we correlated various variables with the mailing wave that a participant responded to, using Spearman's rho.

RESULTS

Response Rate and Potential Non-response Biases

The study site was visited by 311 individuals, 187 (60.1%) of which agreed to participate in the study and completed the pre-hunt questionnaire (Appendix E). Of the 187 participants, 148 (79.1%) individuals responded to the post-hunt questionnaire. Five questionnaires were non-eligible (i.e., participants were less than 18 years old or indicated the questionnaire was completed by another person) and

removed from the dataset, leaving 143 usable questionnaires from 182 eligible participants of the pre-hunt questionnaire for an effective mailing response rate of 78.6% (Dillman, 1978) (Figure 1).

Based on our correlation analysis on mailing waves, we found that early respondents tended to be older, attained a higher level of

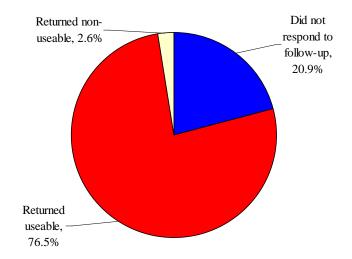


Figure 1. The response rates to the follow-up mail survey (n = 187).

education, and considered hunting more important to them than other outdoor recreation activities. No statistically significant correlations were detected for: 1) overall trip satisfaction, 2) overall hunting experience satisfaction, 3) importance of waterfowl hunting compared to other hunting activities, 4) days spent waterfowl hunting, or 5) annual household income. Further, we detected no statistical differences for expectations between those who filled out a prequestionnaire and post-questionnaire and those who filled out only a pre-questionnaire.

Demographic Characteristics

The majority of participants were "White or Anglo" (99.3%) and male (97.9%). The mean age was 44.5 years, with the majority of participants falling between the ages of 31 and 55 years (Figure 2). A majority of participants (57.3%) had an approximate gross annual household income of \$100,000 and above. Most participants (86.0%) had some college or graduate level education. A plurality of respondents resided in either Illinois (23.1%) or Missouri (16.1%) (Figure 3).

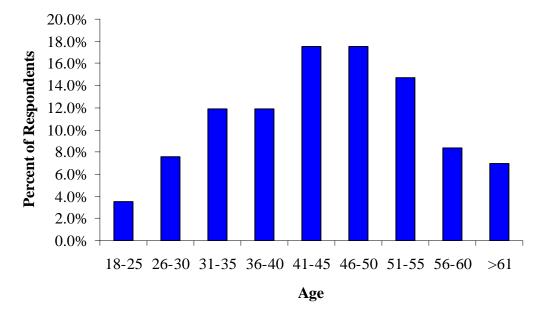


Figure 2. The percent of ages reported by survey participants (Mean = 44.5).

Hunting Characteristics

Survey participants had an average of 15.3 years of waterfowl hunting experience (Figure

4). Hunting was rated as the "most important" outdoor recreation activity for most (51.8%)

participants. Waterfowl hunting was rated as the "most important" hunting activity by 25.5% of participants and as the "second most important" hunting activity by 38.3% of participants. Participants waterfowl hunted an average of 3.22 days in Arkansas and 6.29 days outside of Arkansas during the 2005-06 waterfowl hunting season. One-half of the participants indicated that the 2005-06 waterfowl hunting season was an "average" year in terms of days hunted. Further, a plurality (41.7%) of participants indicated that the 2005-06 waterfowl hunting season was an "average" year in terms of waterfowl hunting year was an "average" year in terms of waterfowl hunting year was an "average" year in terms of waterfowl hunting year was an "average" year was an "average" year was an "average" year was an "averag

Trip Expectations and Satisfactions

Expectations were great for all variables, but were greatest for the variables of "The property will be well-kept" (mean = 4.69), "I will receive quality service at the club house" (mean = 4.68), "The club house will be well-kept" (mean = 4.66), and "I will hunt in well-managed habitat (mean = 4.66) (Table 1). Performance was greatest for the variables of "I received quality service at the club house" (mean = 4.86), "The property was well-kept" (mean = 4.84), "High quality meals were provided at the club house" (mean = 4.83), and "The club house was well-kept" (mean = 4.77) (Table 1). Positive disconfirmation occurred for 28%, confirmation occurred for 40%, and negative disconfirmation occurred for 32% of the 25 items measured (Table 1). Negative disconfirmation was greatest for the items of "I tested my waterfowl hunting skills" (mean = -0.50), "I worked a lot of ducks" (mean = -0.42), and "I saw a variety of wildlife in addition to waterfowl" (mean = -0.42) (Table 1). Positive disconfirmation was greatest for the items of "Other parties interfered with my hunt" (mean = 0.40) (reverse coded, indicating parties did not interfere), "High quality meals were provided at the club house" (mean = 0.19), and "I received quality service at the club house" (mean = 0.19) (Table 1).

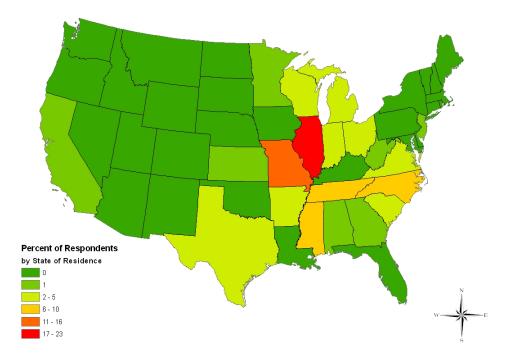


Figure 3. The percent of individuals by state of residence that responded to the follow-up mail survey.

Mean scores were good for all overall evaluations of satisfaction, however, they were greatest for satisfaction with "The service overall" (mean = 4.68), "The property overall" (mean = 4.65), and "The people in your hunting party" (mean = 4.62) and the lowest means were for satisfaction with "Your harvest" (mean = 3.74), "The available hunting opportunities" (mean = 4.20), and "The location(s) you hunted" (mean = 4.21). For satisfaction with the overall trip, 90.8% of the respondents reported being either "very satisfied" or "extremely satisfied," with a mean of 4.44. The performance only scores for the variables: "I worked a lot of ducks" (rho = 0.565), "I was placed in the best available hunting location" (rho = 0.561), "I tested my waterfowl hunting skills" (rho = 0.544), and "I hunted in a pristine environment" (rho = 0.483) were among the strongest correlates with overall trip satisfaction, although all were significantly related (Table H22). The difference scores for the variables of "I worked a lot of ducks" (rho =

0.477), "I hunted in a pristine environment" (rho = 0.436), "I harvested a sufficient number of ducks" (rho = 0.418), and "I was placed in the best available hunting location" (rho = 0.404) were among the strongest correlates with overall trip satisfaction (Table H21). Correlations of difference scores with overall trip satisfaction were all positive for significantly related items (Table H21).

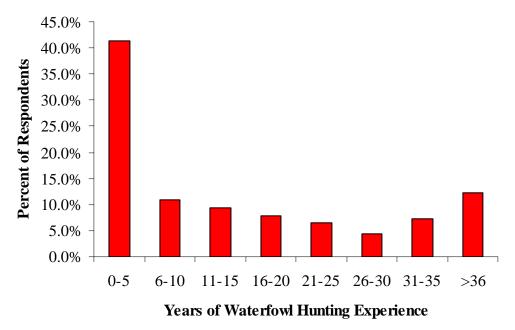


Figure 4. Percent of years waterfowl hunted among participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 15.3 years).

A plurality (46.3%) of responses from item participants requested "to list other activities (hunting or otherwise) that you would like to see the Monsanto Farm and Wildlife Management Center offer in the future," were classified into the "Trap, skeet, or sporting clays" category. Other suggestions were for providing goose hunting opportunities (14.7%), wildlife watching opportunities (7.4%), and deer hunting opportunities (7.4%) (Figure 5).

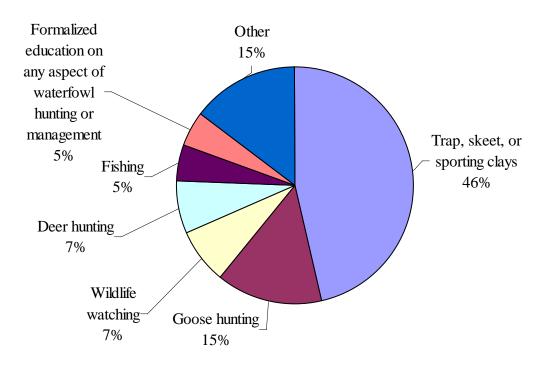


Figure 5. A list of activities visitors to the Monsanto Farm and Wildlife Management Center would like to see offered in the future. Other activities include: Rice field duck hunting, upland bird hunting, afternoon duck hunting, and provide more information for offsite entertainment activities.

Economic Valuation

Survey participants traveled an average of 518.14 one-way miles, hunted an average of 2.08 days in Arkansas, and stayed an average of 0.46 additional days in Arkansas during their trip to the Monsanto property. Participants spent and average of \$255.99 in Arkansas County, an average of \$150.68 elsewhere in Arkansas, and an average of \$165.69 outside of Arkansas. Total average expenditures were \$406.66 in Arkansas and \$572.35 for the entire trip. Survey participants were willing to pay an average of \$359.35 over the cost they already paid before they would not have made the trip.

Table 1. Means for item expectations, performance, and difference scores for participants who filled out both the pre- and post-questionnaires during the 2005-06 waterfowl hunting season; sorted by difference score. Items were classified as exceeding expectations, meeting expectations, or not meeting expectations based on the 95% confidence intervals around the mean difference score (n = 140).

EXPECTATION CLASSIFICATION	Mean	Mean	Difference
Item	Expectations ^a	Performance ^a	Score ^b
EXCEEDING EXPECTATIONS			
Other parties interfered with my hunt ^c	2.03	1.62	0.40
High quality meals were provided at the club house	4.64	4.83	0.19
I received quality service at the club house	4.68	4.86	0.19
I enjoyed hunting with the others in my blind	4.39	4.57	0.17
The rooms were well-kept	4.53	4.70	0.16
The property was well-kept	4.69	4.84	0.15
The club house was well-kept	4.66	4.77	0.12
MEETING EXPECTATIONS			
I had a variety of entertainment options other than	_		
hunting	4.01	4.15	0.14
My guide decoyed ducks in close	4.08	4.12	0.04
I was placed in the best available hunting location	4.10	4.06	-0.03
I hunted in well-managed habitat	4.66	4.63	-0.04
I saw a lot of mallards	4.15	4.09	-0.05
I hunted in a well-built blind	4.36	4.30	-0.07
My participation in this hunt was more than just			
shooting	4.40	4.29	-0.12
Party size was set to maximize harvest opportunities	4.05	3.93	-0.13
I experienced hunting in an environment I do not	1 40	1.00	0.16
typically hunt	4.48	4.33	-0.16
I harvested a sufficient number of ducks	3.97	3.76	-0.19
NOT MEETING EXPECTATIONS	_		
I met new people	4.51	4.37	-0.15
I hunted in a pristine environment	4.43	4.28	-0.16
I saw a variety of duck species	3.86	3.59	-0.29
I harvested a sufficient number of mallards	3.97	3.65	-0.31
I learned a lot from the guides	4.16	3.82	-0.34
I saw a variety of wildlife in addition to waterfowl	4.00	3.59	-0.42
I worked a lot of ducks	3.69	3.27	-0.42
I tested my waterfowl hunting skills	4.04	3.54	-0.50

^a Responses were measured on a scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

^b Means may be different than arithmetically subtracting the mean performance from the mean expectation because of missing values in the data set.

^c This item's response scale was reverse coded to calculate the difference score.

DISCUSSION

Despite relatively great expectations for quality service and well-kept facilities, the staff at the Monsanto Farm and Wildlife Management center was able to exceed those expectations. Accordingly, survey participants reported great levels of satisfaction for items related to those aspects of their trip. Conversely, items related to service quality and well-kept facilities correlated relatively poorly with over trip satisfaction when compared to other items. Although these items correlated relatively poorly with overall trip satisfaction, most were significantly related for both the performance only and the difference score correlations. Thus, we advise to at least maintain the current standard of quality for these trip aspects to assure maintenance of current visitor satisfaction levels.

Among the strongest correlates to overall trip satisfaction were variables related to working a lot ducks, being placed in the best available hunting location, and hunting in a pristine environment. Although mean satisfaction scores for harvest and hunting locale were quite good, they were among the lowest when compared to the other overall evaluations of satisfaction. Furthermore, expectations were not met for the items of "I worked a lot of ducks" or "I hunted in a pristine environment." While the vast majority of visitor reported being "very satisfied" or "extremely satisfied" for the overall trip, improvements to overall satisfaction may still be possible. Not meeting participant expectations for working a lot of ducks or hunting in a pristine environment, coupled with the fact that those items were among the strongest correlates with overall trip satisfaction, suggests that effort to improve these aspects of the trip could increase visitor satisfaction ratings.

The positive direction of significant correlations of difference scores with overall trip satisfaction suggests that visitor satisfaction was, indeed, a function of fulfilled expectations.

Thus, items where expectations were not met (Table 1) and that strongly correlated with overall trip satisfaction (Table H22) should warrant the most management effort to improve satisfaction ratings. Improving natural habitats and managing hunting pressure to attract and hold more ducks could lead to improved trip satisfaction ratings. This would allow clients to work the most possible ducks, be in a pristine environment, and test their waterfowl hunting skills. Thus, habitat management recommendations based off of Dr. Andy Ezell's and Dr. Richard Kaminski's research may offer an excellent avenue to improve waterfowl habitat and visitor satisfaction simultaneously. Because survey participants were willing to pay additional money over the cost of their trip on average, charging a fee to hunt may be one method for generating enough money to improve waterfowl habitat and offer additional amenities to further improve hunter satisfaction ratings. Nevertheless, the fact that visitors were willing to pay additional money over their current trip cost further suggests great visitor satisfaction and that a quality experience is afforded at the Monsanto Farm and Wildlife Management Center.

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APPENDIX A: Pre-Survey Flyer

Monsanto Farm and Wildlife Management Center Waterfowl Hunter Survey

In cooperation with Monsanto, the Department of Wildlife and Fisheries at Mississippi State University (MSU) is conducting a survey of hunter satisfaction and hunting quality at the Monsanto Farm and Wildlife Management Center in Stuttgart, AR. This project is funded by Monsanto through the U.S. Fish & Wildlife Service and your cooperation is greatly appreciated. Your participation in the study is completely voluntary and you may withdraw at any time, but we hope that you will participate because of the benefits it will provide to you and future users of the facility. Because only a few hunters visit the facility each year, your participation is crucial to the success of this study.

The goal of this study is to gain a better understanding of hunters using the Wildlife Management Center by: 1) measuring expectations and satisfactions from hunting the area, 2) gauging preferences for amenities and other non-hunting related aspects of the trip, and 3) monitoring how hunting quality, satisfaction, and preferences change as habitat and amenity improvements are implemented on the property. A summarization of the results will be presented to Monsanto so the property may be better managed for its clientele in the future. Additionally, results will be presented to other corporate and private landowners so they better understand what hunters in the Mississippi flyway want and desire from their hunting experiences on private lands. Finally, the information from this study will contribute to a Masters of Science thesis and various scientific publications.

The study will consist of you completing two questionnaires. The first will be a brief survey regarding your expectations for your current trip, and can be easily completed while Monsanto processes your Arkansas license. Next, within two months of your trip, we will follow-up with a survey that assesses how well the trip met your expectations, your satisfaction with your trip, and your suggestions for improving hunting and nonhunting aspects of the facility. If you are uncomfortable answering any question on either survey you can refuse to do so.

All survey responses will be kept strictly confidential and you will not be identified with your answers. Answers from all survey participants will be grouped for reporting purposes. After the data is entered and checked for accuracy, the connection between your name and the information you provided will be removed. This project has been approved by the MSU Institutional Review Board (IRB) for the Protection of Human Subjects and meets all federal protocols for the protection of participants. Questions regarding the protection of human subjects should be directed to the MSU Regulatory Compliance Office at (662) 325-5220. Refer to the IRB Docket Number 05-221.

If you have any other questions about the study please contact Dr. Kevin Hunt at the address/phone listed below. Thank you in advance for your participation. Your time and participation is greatly appreciated. Good hunting on your trip and throughout the rest of the season!

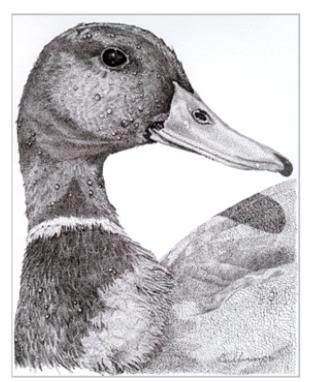
If you have any questions or would like more information about this project, please contact:

Dr. Kevin Hunt (662) 325-0989 or at kmhunt@cfr.msstate.edu

or

Kevin Brunke (662) 325-4153 or at <u>kdb161@msstate.edu</u> Department of Wildlife and Fisheries Mississippi State University P.O. Box 9690, Starkville, MS 39762 Fax: (662) 325-8726 Appendix B: Pre-survey Questionnaire

2006 Monsanto Farm and Wildlife Management Center Waterfowl Hunter Survey



Conducted for the Monsanto Farm and Wildlife Management Center by the Human Dimensions & Conservation Law Enforcement Laboratory Forest & Wildlife Research Center Mississippi State University

2006 SURVEY OF MONSANTO WATERFOWL HUNTERS PAGE 1

Please fill out the information below, so we can determine how well your expectations were met with a follow-up mail survey in the near future. Your information will be held strictly confidential and you will not be identified with your answers. Please place your completed survey in the locked "ballot box" in the lounge area of the club house.

Date:

1. Have you made any trips to the Monsanto property this year?

1. YES --- (If YES, how many trips _____)
2. NO

2. Are you going to participate in a waterfowl hunt on this trip?

- YES
- 2. NO --- (If NO, please place your survey in the locked "ballot box")
- 3. How many days will you be hunting waterfowl on this trip?

_____ DAYS

4. Below is a list of statements intended to measure the expectations you have for your waterfowl hunting trip (from the time you arrive at the Monsanto property to the time you leave). Try to rate the items about the club house how you expected them to be prior to your arrival. Please state how strongly you agree or disagree with the following statements by circling the number that matches your response.

	- Store	too therease	Heatral	1.550	Shorth
a)	I will see a variety of wildlife in addition to waterfow11	2	3	4	5
b)	I will harvest a sufficient number of ducks1	2	3	4	5
c)	I will see a lot of mallards1	2	3	4	5
d)	I will harvest a sufficient number of mallards1	2	3	4	5
e)	I will see a variety of duck species1	2	3	4	5
f)	I will test my waterfowl hunting skills1	2	3	4	5
g)	I will work a lot of ducks	2	3	4	5
h)	I will hunt in well-managed habitat1	2	3	4	5
i)	I will hunt in a pristine environment1	2	3	4	5
j)	I will experience hunting in an environment I do not typically hunt 1	2	3	4	5
k)	I will be placed in the best available hunting location1	2	3	4	5
1)	Party size will be set to maximize harvest opportunities1	2	3	4	5
m)	Other parties will interfere with my hunt1	2	3	4	5
n)	I will enjoy hunting with the others in my blind1	2	3	4	5
0)	My participation in this hunt will be more than just shooting1	2	3	4	5
p)	My guide will decoy ducks in close	2	3	4	5
q)	I will learn a lot from the guides1	2	3	4	5
r)	I will meet new people1	2	3	4	5
s)	I will hunt in a well-built blind	2	3	4	5
t)	The club house will be well-kept	2	3	4	5
u)	I will receive quality service at the club house	2	3	4	5
v)	The property will be well-kept	2	3	4	5
w)	High quality meals will be provided at the club house 1	2	3	4	5
x)	I will have a variety of entertainment options other than hunting 1	2	3	4	5
y)	The rooms will be well-kept	2	3	4	5

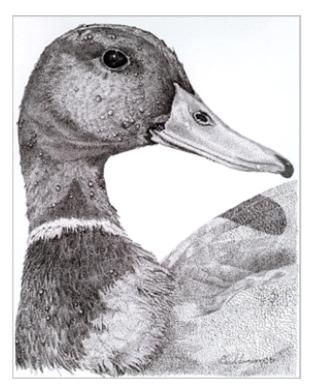
2006 SURVEY OF MONSANTO WATERFOWL HUNTERS PAGE 3

Is there anything else you would like to share with us about waterfowl hunting or management at the Monsanto Farm and Wildlife Management Center?

Your contribution of time to this study is greatly appreciated. Please place your completed questionnaire in the locked ballot box. Thank You.

Mississippi State University Department of Wildlife and Fisheries Mississippi State, MS 39762-9690 10/05 **APPENDIX C: Post-survey Questionnaire**

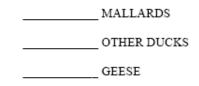
2006 Monsanto Farm and Wildlife Management Center Waterfowl Hunter Survey



Conducted for the Monsanto Farm and Wildlife Management Center *by the* Human Dimensions & Conservation Law Enforcement Laboratory Forest & Wildlife Research Center Mississippi State University

Questions #1 through #5 deal with your _ (MM/DD/YY) trip to the Monsanto Farm and Wildlife Management Center. The information you provide will remain strictly confidential and you will not be identified with your answers.

- 1. Did you participate in a waterfowl hunt on the Monsanto property during the 2005-06 waterfowl hunting season?
 - YES
 - 2. NO --- (If NO, please go to question #15 on page 4)
- 2. How many ducks and geese did you harvest on the Monsanto property during this trip? (If none, please enter zero)



3. How many ducks and geese did your hunting party harvest on the Monsanto property during this trip? (If none, please enter zero)

> MALLARDS OTHER DUCKS GEESE

4. What blind(s) did you hunt during this trip to the Monsanto property? (Blinds are located in the flooded timber and numbered 1 through 7, please circle all that apply)

> 2 3 4 5 6 7 Other Don't Know 1

- 5. Have you hunted the Monsanto property prior to this year?
 - YES --- (Including this year, how many years have you hunted the property?) NO

Ouestions #6 through #12 deal with your general waterfowl hunting activities and experiences, please answer the following questions to the best of your ability.

6. How many years have you been waterfowl hunting?

YEARS

- 7. Compared to your other outdoor recreation activities (such as fishing, camping, golfing, etc.) would you rate hunting as: (Please circle only one answer)
 - 1. YOUR MOST IMPORTANT OUTDOOR ACTIVITY
 - 2. YOUR SECOND MOST IMPORTANT OUTDOOR ACTIVITY
 - 3. YOUR THIRD MOST IMPORTANT OUTDOOR ACTIVITY
 - 4. NONE OF THE ABOVE
- 8. Compared to your other hunting activities, would you rate waterfowl hunting as: (Please circle only one answer)
 - 1. YOUR MOST IMPORTANT HUNTING ACTIVITY
 - 2. YOUR SECOND MOST IMPORTANT HUNTING ACTIVITY
 - YOUR THIRD MOST IMPORTANT HUNTING ACTIVITY
 NONE OF THE ABOVE
- 9. How many days did you hunt waterfowl during the 2005-06 season?

TOTAL DAYS HUNTED IN ARKANSAS TOTAL DAYS HUNTED OUTSIDE OF ARKANSAS

10. How many days did you hunt waterfowl on the following land types during the 2005-06 season? (If none, please enter zero)

STATE WILDLIFE MANAGEMENT AREAS (WMAs)

PUBLIC LANDS (OTHER THAN WMAs)

PRIVATE LANDS WITH A GUIDE

PRIVATE LANDS WITHOUT A GUIDE

11. In terms of days hunted by you, how did the 2005-06 waterfowl hunting season compare to what you consider an "average year" of hunting?

BELOW AVERAGE AVERAGE ABOVE AVERAGE

12. In terms of waterfowl harvested by you, how did the 2005-06 waterfowl hunting season compare to what you consider an "average year" of hunting?

BELOW AVERAGE AVERAGE ABOVE AVERAGE

13. The following questions are designed to measure how well the expectations you rated on the previous survey were met. If you did not fill out the previous survey, your response is still important and you should answer the following questions anyway. Please indicate how strongly you agree or disagree with the following statements by circling the number that matches your response.

	est orte	and the state	1011TR	A LOPP	STORE
	Q*	Q.	~	`.	(** E
a)	I saw a variety of wildlife in addition to waterfow1 1	2	3	4	5
b)	I harvested a sufficient number of ducks	2	3	4	5
c)	I saw a lot of mailards	2	3	4	5
d)	I harvested a sufficient number of mallards 1	2	3	4	5
e)	I saw a variety of duck species 1	2	3	4	5
f)	I tested my waterfowl hunting skills	2	3	4	5
g)	I worked a lot of ducks 1	2	3	4	5
h)	I hunted in well-managed habitat	2	3	4	5
i)	I hunted in a pristine environment	2	3	4	5
j)	I experienced hunting in an environment I do not typically hunt 1	2	3	4	5
k)	I was placed in the best available hunting location	2	3	4	5
D	Party size was set to maximize harvest opportunities	2	3	4	5
m)	Other parties interfered with my hunt	2	3	4	5
n)	I enjoyed hunting with the others in my blind	2	3	4	5
0)	My participation in this hunt was more than just shooting	2	3	4	5
		-			
p)	My guide decoyed ducks in close	2	3	4	5
q)	I learned a lot from the guides	2	3	4	5
r)	I met new people 1	2	3	4	5
s)	I hunted in a well-built blind 1	2	3	4	5
t)	The club house was well-kept	2	3	4	5
u)	I received quality service at the club house	2	3	4	5
v)	The property was well-kept	2	3	4	5
w)	High quality meals were provided at the club house	2	3	4	5
x)	I had a variety of entertainment options other than hunting	2	3	4	5
y)	The rooms were well-kept	2	3	4	5

14. The following questions are intended to measure your satisfaction with your ____ (MM/DD/YY) trip to the Monsanto property in Stuttgart. Please indicate how satisfied you were with the following items.

	How satisfied were you with	We stated	Shekara	With the state	Jert establish	Contraction of the second
a)	The overall trip	1	2	3	4	5
b)	The overall hunting experience		2	3	4	5
c)	The service overall	1	2	3	4	5
d)	The property overall	1	2	3	4	5
e)	The people in your hunting party	1	2	3	4	5
f)	Your harvest	1	2	3	4	5
g)	The location(s) you hunted	1	2	3	4	5
h)	The available amenities	1	2	3	4	5
i)	The available hunting opportunities	1	2	3	4	5
j)	The availability of information about the property	1	2	3	4	5

15. Please use the space below to list other activities (hunting or otherwise) that you would like to see the Monsanto Farm and Wildlife Management Center offer in the future.

For questions #16 through #21 please tell us about the characteristics and expenditures on your (MM/DD/YY) trip to the Monsanto Farm and Wildlife Management Center in Stuttgart, Arkansas County.

16. How many miles did you travel from your home (one-way) to get to the Monsanto property?

ONE-WAY MILES

17. How many days did you spend hunting in Arkansas on this trip to the Monsanto property?

DAYS

18. How many additional days did you spend in Arkansas on this trip to the Monsanto property?

DAYS

19. On this trip, how much did you spend on each of the following items in Arkansas? (Please note that Arkansas county includes the towns of Stuttgart, De Witt, and the Monsanto property)

		In Arkansas County (Stuttgart)	Elsewhere ir Arkansas
a.	Automobile transportation (fuel, rental car, etc.)	\$	\$
b.	Other transportation (airplane, etc.)	\$	\$
c.	Ammunition	\$	\$
d.	Hunting gear (clothing, guns, decoys, etc.)	\$	\$
e.	Shopping	\$	\$
f.	Lodging (hotel, camping, food, etc.)	\$	\$
g.	Restaurant meals	\$	\$
h.	Groceries (food, drinks, ice, etc.)	\$	\$
i.	Guide fees/tips	\$	\$
j.	Hunting licenses	\$	\$
k.	Anything else for this trip (Please specify below)	\$	\$

ARKANSAS\$ \$

20. If you traveled to Stuttgart from out of state, how much more did you spend on this trip outside of Arkansas

DOLLARS

1. TOTAL COST FOR THIS HUNTING TRIP IN

21. How much more would you have spent (over total trip cost in #19 and #20) before you would not have made this trip?

DOLLARS

The following questions will help us to know more about hunters. The information you provide will remain strictly confidential and you will not be identified with your answers.

22. What is your age?

_____YEARS

23. What is your gender?

1. MALE

2. FEMALE

24. What is your approximate annual household income before taxes?

1.	Under \$10,000	7. \$60,000 - \$69,999
2.	\$10,000 - \$19,999	8. \$70,000 - \$79,999
3.	\$20,000 - \$29,999	9. \$80,000 - \$89,999
4.	\$30,000 - \$39,999	10. \$90,000 - \$99,999
5.	\$40,000 - \$49,999	11. \$100,000 and ABOVE
б.	\$50,000 - \$59,999	

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

12345678	<u>9 10 11 12</u>	<u>13 14 15 16</u>	17 18 19 20 21 22+
Elementary	High school	College	Graduate school

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

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

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

- 1. YES
- 2. NO

Is there anything else you would like to share with us about waterfowl hunting or management at the Monsanto Farm and Wildlife Management Center?

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 1/06 **APPENDIX D: Post-survey Letters Accompanying Questionnaire Mailings**

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Department of Wildlife and Fisheries Box 9690 Mississippi State, MS 39762-9690

February 3, 2006

John Doe 123 Buck Drive Fawn, MS 30759

Dear John:

I am conducting a follow-up study on waterfowl hunters that have recently visited the Monsanto Farm and Wildlife Management Center and I need your help. The Monsanto Company has owned the farm for 20 years and no research has been done to determine how satisfied visitors are with the service, the facilities, or the hunting. The Monsanto Company values your perspective on the Farm and Wildlife Management Center and has funded this study to help determine visitor satisfaction and possible needs for improvements.

You are among those who filled out the survey distributed to visitors while on the Monsanto property last fall. The enclosed survey is designed to tell me how well your expectations were met while on the property and how satisfied you are with your visit. The survey will also allow me to determine where improvements can be made on the property to make your stay more enjoyable in the future. Although the survey is completely voluntary, I hope that you will take the 10-15 minutes necessary to provide your input, be a part of the management process, and allow Monsanto to better serve you.

It is important that I hear from you whether you waterfowl hunted or just visited the Monsanto Farm and Wildlife Management Center. Your responses will be strictly confidential, and you will not be identified with your answers. The survey has an identification number for mailing purposes only. This is so I can remove your name from the mailing list once I receive it at Mississippi State University (MSU). Your answers will be grouped with other respondents in a non-identifiable manner, and there is no way for anyone outside of my laboratory to determine your identity. I will destroy the name and address list at the end of the study.

After you complete the questionnaire, please return it to Mississippi State University in the postage-paid, business reply envelope as soon as possible. If you should have any questions about this research project, please feel free to contact me at Mississippi State University at (662) 325-4153. For additional information regarding human participation in research, please feel free to contact the MSU Regulatory Compliance Office at (662) 325-5220.

Thank you in advance for your cooperation.

Sincerely,

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Dr. Kevin M. Hunt, Director Human Dimensions & Conservation Law Enforcement Laboratory



Department of Wildlife and Fisheries Box 9690 Mississippi State, MS 39762-9690

February 24, 2006

John Doe 123 Buck Drive Fawn, MS 30759

Dear John:

About three weeks ago, I sent you a survey about the Monsanto Farm and Wildlife Management Center. As of today, I have not yet received your completed questionnaire. If you have recently returned your survey, please accept my thanks.

The comments of people who have already responded included a wide variety of answers. However, the success and accuracy of our study depends on you and the others who have not yet responded. The Monsanto Company has owned the farm for 20 years and no research has been done to determine how satisfied visitors are with the service, the facilities, or the hunting. The Monsanto Company values your perspective on the Farm and Wildlife Management Center and has funded this study to help determine visitor satisfaction and possible needs for improvements.

In case you misplaced your survey, I've enclosed another. The enclosed survey is designed to tell me how well your expectations were met while on the property and how satisfied you are with your visit. The survey will also allow me to determine where improvements can be made on the property to make your stay more enjoyable in the future. Although the survey is completely voluntary, I hope that you will take the 10-15 minutes necessary to provide your input, be a part of the management process, and allow Monsanto to better serve you.

It is important that I hear from you whether you waterfowl hunted or just visited the Monsanto Farm and Wildlife Management Center. Your responses will be strictly confidential, and you will not be identified with your answers. The survey has an identification number for mailing purposes only. This is so I can remove your name from the mailing list once I receive it at Mississippi State University (MSU). Your answers will be grouped with other respondents in a non-identifiable manner, and there is no way for anyone outside of my laboratory to determine your identity. I will destroy the name and address list at the end of the study.

After you complete the questionnaire, please return it to Mississippi State University in the postage-paid, business reply envelope as soon as possible. If you should have any questions about this research project, please feel free to contact me at Mississippi State University at (662) 325-4153. For additional information regarding human participation in research, please feel free to contact the MSU Regulatory Compliance Office at (662) 325-5220.

Sincerely,

Dr. Kevin M. Hunt, Director Human Dimensions & Conservation Law Enforcement Laboratory

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Department of Wildlife and Fisheries Box 9690 Mississippi State, MS 39762-9690

March 24, 2006

John Doe 123 Buck Drive Fawn, MS 30759

Dear John:

During the last 2 months, I have sent you several mailings with a survey for the Monsanto Farm and Wildlife Management Center. As of today, I have not yet received your completed questionnaire. If you have recently returned your survey, please accept my thanks.

The Monsanto Company values your perspective on the Farm and Wildlife Management Center and has funded this study to help determine visitor satisfaction and possible needs for improvements. This study is drawing to a close, and this is the last contact that will be made with you. The success and accuracy of my study depends on you and the others who have not yet responded. If for some reason you prefer not to respond, please let me know by returning the blank questionnaire in the enclosed business reply envelope.

It is important that I hear from you whether you waterfowl hunted or just visited the Monsanto Farm and Wildlife Management Center. Your responses will be strictly confidential, and you will not be identified with your answers. The survey has an identification number for mailing purposes only. This is so I can remove your name from the mailing list once I receive it at Mississippi State University (MSU). Your answers will be grouped with other respondents in a non-identifiable manner, and there is no way for anyone outside of my laboratory to determine your identity. I will destroy the name and address list at the end of the study.

After you complete the questionnaire, please return it to Mississippi State University in the postage-paid, business reply envelope as soon as possible. If you should have any questions about this research project, please feel free to contact me at Mississippi State University at (662) 325-4153. For additional information regarding human participation in research, please feel free to contact the MSU Regulatory Compliance Office at (662) 325-5220.

Sincerely,

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Dr. Kevin M. Hunt, Director Human Dimensions & Conservation Law Enforcement Laboratory

APPENDIX E: Response Rate and State of Residence Tables

Tuble EII. The percent and nequency for response earegoines for the follow up main survey.				
Status	Frequency	Percent		
Did not respond to follow-up	39	20.9		
Returned useable	143	76.5		
Returned non-useable	5	2.6		
Total	187	100.0		

Table E1. The percent and frequency for response categories for the follow-up mail survey.

Table E2. The percent and frequency of respondents to the follow-up survey for each mailing wave.

Mailing wave	Frequency	Percent
Wave 1	96	64.9
Wave 2	36	24.3
Wave 3	16	10.8
Total	148	100.0

Table E3. The percent and frequency of individuals by state of residence that responded to the follow-up mail survey.

State	Frequency	Percent
Alabama	2	1.4
Arkansas	7	4.9
California	1	0.7
Georgia	2	1.4
Illinois	33	23.1
Indiana	6	4.2
Kansas	2	1.4
Michigan	6	4.2
Minnesota	1	0.7
Mississippi	9	6.3
Missouri	23	16.1
New Jersey	1	0.7
North Carolina	14	9.8
Ohio	6	4.2
South Carolina	5	3.5
Tennessee	8	5.6
Texas	7	4.9
Virginia	5	3.5
West Virginia	1	0.7
Wisconsin	4	2.7
Total	143	100.0

APPENDIX F: Tables for Pre-survey Results

Table F1. The percent and frequency of respondents that completed both the pre- and postquestionnaires who indicated they made a trip to the Monsanto property already during the 2005-06 waterfowl hunting season in the pre-survey.

Trips this year	Frequency	Percent
Yes	33	23.1
No	110	76.9
Total	143	100.0

Table F2. The percent and frequency of trips to the Monsanto property during the 2005-06 waterfowl hunting season, as reported by those who completed both the pre- and post-questionnaires.

Number of trips this year	Frequency	Percent
0	111	77.6
1	30	21.0
2	1	0.7
4	1	0.7
Total	143	100.0

Table F3. The percent and frequency of respondents indicating they were going to participate in a waterfowl hunt in the pre-survey, as reported by those who completed both the pre- and post-questionnaires.

Participate in a hunt	Frequency	Percent
Yes	143	100.0
No	0	0.0
Total	143	100.0

Table F4. The percent and frequency of days respondents to both the pre- and post-

questionnaires indicated the	v were going to y	waterfowl hunt on	their trip in t	he pre-questionnaire.
1			men mp m.	

Days hunting on trip	Frequency	Percent
1	3	2.1
2	137	95.8
4	2	1.4
5	1	0.7
Total	143	100.0

Table F5. Percent and means for each of the 25 items related to trip expectations for participants who filled out both the pre- and post-questionnaires for the 2005-06 waterfowl hunting season (n = 143).

- 1+3).	Level of Agreement (%) ^a					
What expected during trip	1	2	3	4	5	Mean
I will see a variety of wildlife in addition to						
waterfowl	0.0	2.8	15.6	60.3	21.3	4.00
I will harvest a sufficient number of ducks	2.8	2.1	20.4	45.1	29.6	3.97
I will see a lot of mallards	0.7	2.1	14.8	46.5	35.9	4.15
I will harvest a sufficient number of mallards	1.4	1.4	25.3	42.3	29.6	3.97
I will see a variety of duck species	0.7	7.1	20.6	48.9	22.7	3.86
I will test my waterfowl hunting skills	1.4	2.8	16.2	49.3	30.3	4.04
I will work a lot of ducks	3.5	6.3	26.8	44.4	19.0	3.69
I will hunt in well-managed habitat	0.0	0.7	1.4	28.9	69.0	4.66
I will hunt in a pristine environment	0.7	3.6	9.2	25.5	61.0	4.43
I will experience hunting in an environment I do not						
typically hunt	0.7	3.6	10.6	17.0	68.1	4.48
I will be placed in the best available hunting location	0.0	0.7	17.6	52.8	28.9	4.10
Party size will be set to maximize harvest						
opportunities	0.0	2.1	18.3	52.1	27.5	4.05
Other parties will interfere with my hunt ^b	3.5	4.2	15.5	45.1	31.7	3.97
I will enjoy hunting with the others in my blind	0.0	0.7	6.3	45.8	47.2	4.39
My participation in this hunt will be more than just						
shooting	0.0	4.2	5.6	35.9	54.3	4.40
My guide will decoy ducks in close	0.7	0.7	19.3	48.6	30.7	4.08
I will learn a lot from the guides	0.0	4.2	16.2	39.4	40.2	4.16
I will meet new people	0.7	1.4	4.2	33.1	60.6	4.51
I will hunt in a well-built blind	0.0	0.7	9.8	42.3	47.2	4.36
The club house will be well-kept	0.0	0.7	1.4	29.6	68.3	4.66
I will receive quality service at the club house	0.0	0.7	1.4	27.5	70.4	4.68
The property will be well-kept	0.0	0.7	0.0	28.9	70.4	4.69
High quality meals will be provided at the club house	0.0	0.7	2.8	28.2	68.3	4.64
I will have a variety of entertainment options other	0.0	017		-01-	00.0	
than hunting	0.7	3.5	22.5	40.9	32.4	4.01
The rooms will be well-kept	0.7	0.7	2.8	36.6	59.2	4.53
^a The response formatic 1 – Strongly discorrect 2 – Disc				50.0		

^a The response format is 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree.

^b This item was reverse coded.

Table F6. The percent and frequency of those who indicated they had something else to share in the open ended comments about waterfowl hunting or management at the Monsanto property. The open ended comments are typed in Appendix G.

Anything else shared	Frequency	Percent
Yes	35	18.7
No	152	81.3
Total	187	100.0

APPENDIX G: Open-ended Comments from Pre-survey

Open-ended comments appear exactly as they were written on the back of the questionnaire. As part of our laboratory policy, all specific names of respondents and staff members were removed and replaced with "[X]" if an individual staff member was mentioned or "[The employees]" if multiple employees were mentioned.

- 10002 My first trip was at the Jacob Hartz Lodge in 1985. I've been here several times and it has always been a joy. I've had many memories from this lodge and in the duck blinds.
- 10009 I need a device that locks up my gun when I am pointing it at a hen. That way I can always get my limit of ducks.
- 10015 I would like to thank you for the enjoyable time that I will have.
- 10020 Make sure we hunt safely!
- 10024 I am a very inexperienced waterfowl hunter. This facility has been a dream come true to me. The lodge, food, stuff, and total duck hunting experience has been unbelievable to this Texas boy!
- 10026 Excellent facility. Good management. Excellent Guides. Very good organization!
- 10028 Great, well managed area!
- 10036 Everything is great keep up the good work
- 10037 Quality!
- 10040 Have come here several years to duck hunt and have had a very good experience. There is very little green timber hunting like you have here. The club house is very nice and the staff very helpful. Only one suggestion- can you limit on eliminate smoking in the club house? Thanks
- 10042 Very much looking forward to the experience and the company.
- 10051 First duck hunt I've experienced, and would like to thank Monsanto for the invitation and the hospitality I received.
- 10053 Very impressed with hospitality and facilities. The land and environment is just incredible. Monsanto is truly a great company to be a part of!
- 10055 Been coming here numerous times and it was outstanding. Great improvement with the quality and personality of the guides [X] was the best quality guide I have been with in years, great to spend time with in the field.
- 10058 Personal floatation devices should be used when traveling by boat. The safety video shows hunters traveling by boat without floatation devices.

ID	Pre-survey open ended comments
10065	I have been invited here the last 4 years and can honestly state this is the finest hunting facility I have been in - bar none. I have fifty years of waterfowl hunting with some tremendous memories. Monsanto farm and wildlife management center ranks at the pinnacle of it all. Thanks to the management and great kitchen staff for all you do. I truly appreciate you all sharing this great facility with us.
10071	This is a top of the line hunting resort.
10080	Thank you for the opportunity. The workers that greeted us from the cooks to the guides were top notch.
10096	Best hunt I have ever been on.
10106	Had a great time! Thanks Monsanto and NWTF.
10108	Keep up the good work.
10111	I want to thank Monsanto for the opportunity.
10112	Thanks for making this available to the Academy of the Sacred Heart!
10122	Coming too Monsanto is a true pleasure. As an avid water fowler I certainly appreciate the conservation approach and willingness of the guides and biologists to insure not only a great hunt, but also a memorable experience.
10137	Very good people. Nice property and location
10140	I have not got enjoyed the opportunity to eat. I have met new people other than the person I had to ride all that way with. I look forward to going home and telling stories
10144	I have been looking forward to coming here to hunt this year, I have been in the past years and have enjoyed it greatly. [The employees] as well as the others have always made our trip something to talk about and have helped to make good memories
10157	I appreciate the opportunity to be here and experience a great hunting experience and Monsanto hospitality
10161	THANK YOU
10165	Should hunt longer, the later season gets. 9:00 a but early to come in
10168	I have only been here a few hours, but it seems this is well organized and well taken

10168 I have only been here a few hours, but it seems this is well organized and well taken care of.

ID	Pre-survey open ended comments
10172	I don't have a RNT call so fix me up with one or at least one of the girls behind the counter at the RNT store.
10173	So far I have been very pleased and excited about this; and I am very appreciative for this opportunity
10182	This is my second trip. I had a great time last year. It is evident the entire staff is focused on making every guest feel "at home" and I found all the employees very friendly. I enjoy the info shared by [the employees] and like to learn about hunting in an environment different than home
10186	Wonderful opportunity wonderful experience

APPENDIX H: Tables for Post-survey Results

Table H1. The percent and frequency of participants who indicated they participated in a waterfowl hunt on the Monsanto property during the 2005-06 waterfowl hunting season on the post-questionnaire.

Participated in a hunt	Frequency	Percent
Yes	139	100.0
No	0	0.0
Total	139	100.0

Table H2. The average number of ducks and geese personally harvested during a trip to the Monsanto property for the 2005-06 waterfowl hunting season.

Birds personally harvested	Mean	Standard Error
Mallards	4.08	0.27
Other ducks	0.96	0.13
Geese	0.57	0.11

Table H3. The average number of ducks and geese harvested by each hunting party during a trip to the Monsanto property for the 2005-06 waterfowl hunting season.

Birds party harvested	Mean ^a	Standard Error
Mallards	19.59	2.24
Other ducks	3.60	0.45
Geese	1.81	0.30

^a Means may be off because of possible double counting by individuals who filled out the postsurvey and were in the same hunting party.

Table H4. The percent and frequency of participants who indicated they hunted the Monsanto
property prior to the 2005-06 waterfowl hunting season.

Hunted property before	Frequency	Percent
Yes	51	36.4
No	89	63.6
Total	140	100.0

Table H5. The percent and frequency of years hunted at the Monsanto property among those who indicated they have hunted the property prior to the 2005-06 waterfowl hunting season. (Mean = 4.5 years, including the 2005-06 season).

Years hunted property	Frequency	Percent
0-5	38	82.6
> 6	8	17.4
Total	46	100.0

Years hunted waterfowl	Frequency	Percent
0-5	57	41.3
6-10	15	10.9
11-15	13	9.4
16-20	11	7.9
21-25	9	6.5
26-30	6	4.4
31-35	10	7.3
>36	17	12.3
Total	138	100.0

Table H6. The percent and frequency of years waterfowl hunted among participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 15.3 years).

Table H7. The percent and frequency of how participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season rated hunting compared to their other outdoor recreation activities (such as fishing, camping, golfing, etc.).

Rated hunting	Frequency	Percent
Most important	73	51.8
Second most important	34	24.1
Third most important	22	15.6
None of the above	12	8.5
Total	141	100.0

Table H8. The percent and frequency of how participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season rated waterfowl hunting compared to their other hunting activities.

Rated waterfowl hunting	Frequency	Percent
Most important	36	25.5
Second most important	54	38.3
Third most important	32	22.7
None of the above	19	13.5
Total	141	100.0

Table H9. A matrix comparing how participants rated the importance of waterfowl hunting compared to other types of hunting by the importance of hunting compared to other outdoor recreational activities (n = 141).

		How they rated the importance of waterfowl hunting compared to other types of hunting (Percent)					
How they noted the	IMPORTANCE	MOST	SECOND	THIRD	NONE OF THE ABOVE		
How they rated the importance of hunting compared to other outdoor recreational	15.6	17.7	10.7	7.8			
	SECOND	6.4	12.1	4.3	1.4		
activities (Percent)	THIRD	0.7	7.1	6.4	1.4		
ТН	NONE OF THE ABOVE	2.8	1.4	1.4	2.8		

Table H10. The percent and frequency of days hunted in Arkansas by survey participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 3.22 days).

nuned the monsule property during the 2005 of wateriow number (mean = 5.22 du js).				
Days hunted in Arkansas	Frequency	Percent		
0-5	129	90.2		
6-10	8	5.6		
>11	6	4.2		
Total	143	100.0		

Table H11. The percent and frequency of days hunted outside of Arkansas by survey participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 6.29 days).

(1010411 0.12) 44(35).		
Days hunted outside Arkansas	Frequency	Percent
0-5	99	69.2
6-10	15	10.5
11-15	10	7.0
16-20	5	3.5
> 21	14	9.8
Total	143	100.0

Table H12. The percent and frequency of days hunted on state wildlife management areas by survey participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 0.60 days).

Days hunted on state wildlife management areas	Frequency	Percent
0-5	136	95.1
6-10	6	4.2
>11	1	0.7
Total	143	100.0

Table H13. The percent and frequency of days hunted on other types of public land by survey participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 0.75 days).

Days hunted on other public lands	Frequency	Percent
0-5	137	95.8
6-10	3	2.1
>11	3	2.1
Total	143	100.0

Table H14. The percent and frequency of days hunted on private land with a guide by survey participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 1.91 days).

Days hunted on private lands with a guide	Frequency	Percent
0-5	139	97.2
> 6	4	2.8
Total	143	100.0

Table H15. The percent and frequency of days hunted on private land without a guide by survey participants who hunted the Monsanto property during the 2005-06 waterfowl hunting season (Mean = 5.95 days).

Days hunted on private lands without a guide	Frequency	Percent
0-5	98	68.5
6-10	17	11.9
11-15	8	5.6
16-20	7	4.9
21-25	5	3.5
> 26	8	5.6
Total	143	100.0

Table H16. The percent and frequency of how survey participants compared the 2005-06 waterfowl hunting season to what they would consider and "average year" in terms of days hunted.

Days hunted this year	Frequency	Percent
Below Average	38	27.1
Average	70	50.0
Above Average	32	22.9
Total	140	100.0

Table H17. The percent and frequency of how survey participants compared the 2005-06 waterfowl hunting season to what they would consider and "average year" in terms of waterfowl harvested.

Waterfowl harvested this year	Frequency	Percent
Below Average	40	28.8
Average	58	41.7
Above Average	41	29.5
Total	139	100.0

Table H18. The percent and means for each of the 25 items related to the fulfillment of trip expectations for participants who filled out both the pre- and post-survey for the 2005-06 waterfowl hunting season.

waterrowr naming season.	Level of Agreement (%) ^a					
How trip met expectations	1	2	3	4	5	Mean
I saw a variety of wildlife in addition to waterfowl	2.8	14.9	18.4	48.3	15.6	3.59
I harvested a sufficient number of ducks	5.0	14.9	15.6	28.3	36.2	3.76
I saw a lot of mallards	2.1	14.9	7.1	24.1	51.8	4.09
I harvested a sufficient number of mallards	9.9	14.2	13.5	26.2	36.2	3.65
I saw a variety of duck species	3.6	9.9	23.4	50.3	12.8	3.59
I tested my waterfowl hunting skills	7.1	9.2	26.9	36.2	20.6	3.54
I worked a lot of ducks	9.2	17.7	30.5	22.0	20.6	3.27
I hunted in well-managed habitat	0.0	0.7	3.5	27.7	68.1	4.63
I hunted in a pristine environment	0.0	5.7	12.1	31.2	51.0	4.28
I experienced hunting in an environment I do not						
typically hunt	0.7	5.7	9.2	29.1	55.3	4.33
I was placed in the best available hunting location	0.0	3.5	20.0	42.9	33.6	4.06
Party size was set to maximize harvest opportunities	1.4	5.0	20.7	45.0	27.9	3.93
Other parties interfered with my hunt ^b	2.1	2.9	8.5	27.9	58.6	4.38
I enjoyed hunting with the others in my blind	0.0	1.4	2.1	34.3	62.2	4.57
My participation in this hunt was more than just						
shooting	0.7	4.3	7.2	41.0	46.8	4.29
My guide decoyed ducks in close	0.7	3.6	18.4	37.6	39.7	4.12
I learned a lot from the guides	4.3	6.4	19.9	42.5	26.9	3.82
I met new people	0.0	0.7	7.1	46.8	45.4	4.37
I hunted in a well-built blind	2.1	4.3	8.5	31.9	53.2	4.30
The club house was well-kept	0.0	0.0	0.7	21.4	77.9	4.77
I received quality service at the club house	0.0	0.0	0.0	13.6	86.4	4.86
The property was well-kept	0.0	0.0	0.0	15.6	84.4	4.84
High quality meals were provided at the club house	0.0	0.7	1.4	12.1	85.8	4.83
I had variety of entertainment options other than						
hunting	0.7	3.6	17.7	36.2	41.8	4.15
The rooms were well-kept	0.0	0.0	1.4	27.7	70.9	4.70

^a The response format is 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree.

^b This item was reverse coded.

expectations for a trip t	b to the Monsanto property during the 2005-06 waterfowl hunting season. Difference Score (%) ^a									.5011.
Difference score item	-4	-3	-2	-1	0	1	2	3	4	Mean
I saw a variety of wildlife in addition to waterfowl	0.0	4.3	11.5	23.1	46.0	13.7	0.7	0.7	0.0	-0.42
I harvested a sufficient number of ducks	2.1	2.9	11.4	20.0	32.9	22.2	7.1	1.4	0.0	-0.19
I saw a lot of mallards	0.7	4.3	7.2	16.4	39.3	25.7	4.3	1.4	0.7	-0.05
I harvested a sufficient number of mallards	2.9	3.6	16.4	14.3	34.3	19.3	8.5	0.7	0.0	-0.31
I saw a variety of duck species	0.0	0.7	7.9	34.6	38.1	14.4	3.6	0.7	0.0	-0.29
I tested my waterfowl hunting skills	2.9	2.9	12.8	23.6	41.4	14.3	1.4	0.7	0.0	-0.50
I worked a lot of ducks	1.4	2.9	13.6	30.0	29.3	17.8	3.6	1.4	0.0	-0.42
I hunted in well- managed habitat	0.0	0.0	1.4	20.0	62.2	15.0	0.7	0.7	0.0	-0.04
I hunted in a pristine environment	0.0	0.7	4.3	24.5	54.7	13.0	2.1	0.7	0.0	-0.16
I experienced hunting in an environment I do not typically hunt	0.7	1.4	5.8	18.7	56.9	12.2	3.6	0.7	0.0	-0.16
I was placed in the best available hunting location	0.0	1.4	3.6	20.9	49.7	20.1	3.6	0.7	0.0	-0.03
Party size was set to maximize harvest opportunities	0.7	0.7	4.3	26.7	45.3	18.0	3.6	0.7	0.0	-0.13
Other parties interfered with my hunt ^b	2.2	0.0	2.2	10.1	43.1	28.8	8.6	2.8	2.2	0.40
I enjoyed hunting with the others in my blind	0.0	0.7	0.7	11.5	59.7	23.8	2.9	0.7	0.0	0.17

Table H19. The percent and means for the difference scores for each of the 25 items related to expectations for a trip to the Monsanto property during the 2005-06 waterfowl hunting season.

My participation in this hunt was more than just shooting	0.0	0.7	4.4	25.4	50.0	16.7	1.4	1.4	0.0	-0.12
My guide decoyed ducks in close	0.0	2.2	4.4	19.6	44.9	21.0	6.5	0.7	0.7	0.04
I learned a lot from the guides	0.7	1.4	7.9	28.6	44.3	16.4	0.7	0.0	0.0	-0.34
I met new people	0.0	0.0	3.6	23.6	60.7	9.3	2.1	0.7	0.0	-0.15
I hunted in a well-built blind	1.4	0.0	5.8	15.0	55.7	20.0	1.4	0.7	0.0	-0.07
The club house was well-kept	0.0	0.0	0.7	10.8	66.9	20.2	0.7	0.7	0.0	0.12
I received quality service at the club house	0.0	0.0	0.0	7.2	69.8	20.9	1.4	0.7	0.0	0.19
The property was well- kept	0.0	0.0	0.0	5.7	75.0	18.6	0.0	0.7	0.0	0.15
High quality meals were provided at the club house	0.0	0.0	1.4	5.0	70.7	19.3	2.9	0.7	0.0	0.19
I had variety of entertainment options other than hunting	0.0	0.7	3.6	20.7	40.0	27.2	7.1	0.7	0.0	0.14
The rooms were well- kept ^a The difference score was	0.0	0.0 d by arit	0.0	<u>12.2</u> lly subtr	63.6	21.4	1.4	1.4	0.0	0.16

^a The difference score was derived by arithmetically subtracting the participants' expectations from how well they thought their expectations were fulfilled. ^b This item was reverse coded.

Table H20. Means for item expectations, performance, and difference scores for participants; sorted by difference scores. Items were classified as positive disconfirmation, confirmation, or negative disconfirmation based on the 95% confidence intervals around the mean difference score (n - 140)

<u>score (n = 140).</u>			
DISCONFIRMATION	Mean	Mean	Difference
Item	Expectations ^a	Performance ^a	Score ^b
POSITIVE DISCONFIRMATION (Exceeded			
expectations)			
Other parties interfered with my hunt ^c	2.03	1.62	0.40
High quality meals were provided at the club house	4.64	4.83	0.19
I received quality service at the club house	4.68	4.86	0.19
I enjoyed hunting with the others in my blind	4.39	4.57	0.17
The rooms were well-kept	4.53	4.70	0.16
The property was well-kept	4.69	4.84	0.15
The club house was well-kept	4.66	4.77	0.12
X			
CONFIRMATION (Met expectations)			
I had a variety of entertainment options other than			
hunting	4.01	4.15	0.14
My guide decoyed ducks in close	4.08	4.12	0.04
I was placed in the best available hunting location	4.10	4.06	-0.03
I hunted in well-managed habitat	4.66	4.63	-0.04
I saw a lot of mallards	4.15	4.09	-0.05
I hunted in a well-built blind	4.36	4.30	-0.07
My participation in this hunt was more than just			
shooting	4.40	4.29	-0.12
Party size was set to maximize harvest			
opportunities	4.05	3.93	-0.13
I experienced hunting in an environment I do not			
typically hunt	4.48	4.33	-0.16
I harvested a sufficient number of ducks	3.97	3.76	-0.19
			••••
NEGATIVE DISCONFIRMATION (Did not meet			
expectations)			
I met new people	4.51	4.37	-0.15
I hunted in a pristine environment	4.43	4.28	-0.16
I saw a variety of duck species	3.86	3.59	-0.29
I harvested a sufficient number of mallards	3.97	3.65	-0.31
I learned a lot from the guides	4.16	3.82	-0.34
I saw a variety of wildlife in addition to waterfowl	4.00	3.59	-0.42
I worked a lot of ducks	3.69	3.27	-0.42
I tested my waterfowl hunting skills	4.04	3.54	-0.50
	1.04	5.54	0.00

^a Responses were measured on a scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

^b Means may be different than arithmetically subtracting the mean performance from the mean expectation because of missing values in the data set.

^cThis item's response scale was reverse coded to calculate the difference score.

$\frac{1}{1}$	Spearman's	
Item ^a	rho ^b	<i>p</i> -value
I worked a lot of ducks	0.477	< 0.0001
I hunted in a pristine environment	0.436	< 0.0001
I harvested a sufficient number of ducks	0.418	< 0.0001
I was placed in the best available hunting location	0.404	< 0.0001
I tested my waterfowl hunting skills	0.391	< 0.0001
I harvested a sufficient number of mallards	0.366	< 0.0001
Party size was set to maximize harvest opportunities	0.355	< 0.0001
I learned a lot from the guides	0.342	< 0.0001
My guide decoyed ducks in close	0.332	< 0.0001
I had a variety of entertainment options other than hunting	0.320	< 0.0001
My participation in this hunt was more than just shooting	0.309	0.0002
I saw a lot of mallards	0.304	0.0003
I saw a variety of wildlife in addition to waterfowl	0.300	< 0.0001
I experienced hunting in an environment I do not typically		
hunt	0.294	0.0004
I hunted in well-managed habitat	0.274	0.0011
I met new people	0.198	0.0189
Other parties interfered with my hunt ^c	0.177	0.0367
I hunted in a well-built blind	0.177	0.0360
I saw a variety of duck species	0.164	0.0536
The property was well-kept	0.150	0.0773
The rooms were well-kept	0.150	0.0776
The club house was well-kept	0.116	0.1733
I enjoyed hunting with the others in my blind	0.107	0.2091
I received quality service at the club house	-0.031	0.7152
High quality meals were provided at the club house	-0.060	0.4829
^a Responses were measured on a scale where $1 = $ Strongly Disa	$\sigma ree 2 = Disagree 3$	– Neutral

Table H21. The results of difference scores correlated with overall trip satisfaction; sorted by Spearman's rho (n = 141).

^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.

^c This item was reverse coded.

Item ^a	Spearman's	<i>p</i> -value
	rho ^b —	P
	0	0.0001
I worked a lot of ducks	0.565	< 0.0001
I was placed in the best available hunting location	0.561	< 0.0001
I tested my waterfowl hunting skills	0.544	< 0.0001
I hunted in a pristine environment	0.483	< 0.0001
I had a variety of entertainment options other than hunting	0.477	< 0.0001
I hunted in well-managed habitat	0.470	< 0.0001
Party size was set to maximize harvest opportunities	0.452	< 0.0001
The property was well-kept	0.449	< 0.0001
I harvested a sufficient number of ducks	0.445	< 0.0001
I learned a lot from the guides	0.445	< 0.0001
My guide decoyed ducks in close	0.443	< 0.0001
I harvested a sufficient number of mallards	0.442	< 0.0001
I saw a lot of mallards	0.409	< 0.0001
I met new people	0.391	< 0.0001
The rooms were well-kept	0.385	< 0.0001
My participation in this hunt was more than just shooting	0.347	< 0.0001
I hunted in a well-built blind	0.339	< 0.0001
I saw a variety of wildlife in addition to waterfowl	0.338	< 0.0001
I received quality service at the club house	0.328	< 0.0001
The club house was well-kept	0.320	< 0.0001
Other parties interfered with my hunt ^c	0.319	< 0.0001
I experienced hunting in an environment I do not typically		
hunt	0.305	0.0002
I saw a variety of duck species	0.269	0.0012
I enjoyed hunting with the others in my blind	0.231	0.0060
High quality meals were provided at the club house	0.222	0.0081
^a Responses were measured on a scale where $1 =$ Strongly Disag	gree, 2 = Disagree, 3	

Table H22. The results of performance only items correlated with overall trip satisfaction; sorted by Spearman's rho (n = 141).

^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.

^c This item was reverse coded.

= 142).	Level of Satisfaction (%) ^a					
How satisfied were you with	1	2	3	4	5	Mean ^a
The service overall	0.0	0.0	1.4	28.9	69.7	4.68
The property overall	0.0	0.7	2.1	28.2	69.0	4.65
The people in your hunting party	0.0	1.4	1.4	31.0	66.2	4.62
The overall trip	0.0	2.1	7.1	35.2	55.6	4.44
The available amenities	0.0	1.4	8.5	39.0	51.1	4.40
The availability of information about the property	0.7	3.5	12.0	39.4	44.4	4.23
The overall hunting experience	1.4	7.0	9.9	31.7	50.0	4.22
The location(s) you hunted	1.4	2.1	13.4	40.1	43.0	4.21
The available hunting opportunities	0.7	2.8	14.8	39.4	42.3	4.20
Your harvest	7.8	8.5	22.5	24.6	36.6	3.74

Table H23. The percent for each satisfaction level of participants; ranked by mean satisfaction (n = 142).

^a Means are based on a scale where 1 = Not at all Satisfied, 2 = Slightly Satisfied, 3 = Moderately Satisfied, 4 = Very Satisfied, and 5 = Extremely Satisfied.

Other activities Monsanto should offer ^a	Frequency	Percent
Trap, skeet, or sporting clays	19	46.3
Goose hunting	6	14.7
Wildlife watching	3	7.4
Deer hunting	3	7.4
Fishing	2	4.9
Formalized education on any aspect of waterfowl hunting		
or management	2	4.9
Rice field duck hunting	1	2.4
Upland bird hunting	1	2.4
Locate entertainment activities off the Monsanto property	1	2.4
Provide covered vehicles to travel to blinds	1	2.4
Other types of hunting besides waterfowl	1	2.4
Afternoon duck hunting	1	2.4
Total	41	100.0

Table H24. The percent and frequency of responses from participants who suggested other activities they would like to see offered at the Monsanto property in the future; sorted by frequency.

^a Items were asked in an open-ended format and then grouped for reporting purposes.

Table H25. Means for how many one-way miles participants traveled to get to the Monsanto property.

One-way miles traveled to get to the property	Mean	Standard Error
All participants grouped $(n = 134)$	518.14	26.43
Non-residents of Arkansas $(n = 127)$	544.89	25.87
Residents of Arkansas $(n = 7)$	32.86	11.90

Table H26. Means for how many days spent hunting in Arkansas on this trip to the Monsanto property for survey participants.

Days hunted in Arkansas on this trip	Mean	Standard Error
All participants grouped ($n = 143$)	2.08	0.04
Non-residents of Arkansas ($n = 136$)	2.09	0.04
Residents of Arkansas $(n = 7)$	2.00	0.00

Table H27. Means for how many additional days spent in Arkansas as a result of this trip to the Monsanto property for survey participants.

Additional days stayed in Arkansas on this trip	Mean	Standard Error
All participants grouped ($n = 136$)	0.46	0.07
Non-residents of Arkansas $(n = 133)$	0.44	0.07

	In Arkansas County		Elsewhere i	n Arkansas
Expense category	Mean (\$)	Standard Error	Mean (\$)	Standard Error
Automobile transportation (fuel, rental				
car, etc.)	21.26	2.75	28.82	5.86
Other transportation (airplane, etc.)	12.27	5.86	50.15	23.56
Ammunition	17.62	2.99	8.68	7.03
Hunting gear (clothing, guns, decoys,				
etc.)	50.29	9.48	5.17	3.63
Shopping	29.55	5.78	6.89	5.33
Lodging (hotel, camping, food, etc.)	10.10	5.48	30.03	27.98
Restaurant meals	7.73	2.03	5.24	1.35
Groceries (food, drinks, ice, etc.)	5.37	1.49	2.55	0.78
Guide fees/tips	34.76	9.05	9.02	7.20
Hunting licenses	13.06	2.18	3.08	2.17
Anything else for this trip	53.99	36.37	1.05	0.78
Total Cost for this hunting trip in				
Arkansas	255.99	41.51	150.68	72.93

Table H28. Mean expenditures for all participants, where missing values were replaced with zero (n = 143).

Table H29. Mean expenditures for non-residents of Arkansas, where missing values were replaced with zero (n = 136).

	_ In Arkans	sas County	Elsewhere in Arkansas		
Expense category	Mean (\$)	Standard Error	Mean (\$)	Standard Error	
Automobile transportation (fuel, rental					
car, etc.)	21.73	2.87	29.90	6.14	
Other transportation (airplane, etc.)	12.90	6.17	52.73	24.76	
Ammunition	17.87	3.14	9.01	7.39	
Hunting gear (clothing, guns, decoys,					
etc.)	51.40	9.92	5.44	3.82	
Shopping	31.07	6.05	1.73	1.05	
Lodging (hotel, camping, food, etc.)	10.63	5.76	31.58	29.42	
Restaurant meals	8.13	2.13	5.51	1.42	
Groceries (food, drinks, ice, etc.)	5.65	1.56	2.49	0.80	
Guide fees/tips	35.15	9.51	9.49	7.57	
Hunting licenses	13.38	2.28	3.24	2.28	
Anything else for this trip	56.76	38.24	1.10	0.82	
Total Cost for this hunting trip in					
Arkansas	264.66	43.51	152.22	76.51	

	In Arkans	sas County	Elsewhere	in Arkansas
Expense category	Mean (\$)	Standard Error	Mean (\$)	Standard Error
Automobile transportation (fuel, rental				
car, etc.)	12.14	5.44	7.86	5.33
Other transportation (airplane, etc.)	0.00	0.00	0.00	0.00
Ammunition	12.71	3.93	2.14	2.14
Hunting gear (clothing, guns, decoys,				
etc.)	28.57	16.86	0.00	0.00
Shopping	0.00	0.00	107.14	107.14
Lodging (hotel, camping, food, etc.)	0.00	0.00	0.00	0.00
Restaurant meals	0.00	0.00	0.00	0.00
Groceries (food, drinks, ice, etc.)	0.00	0.00	3.57	3.57
Guide fees/tips	27.14	7.78	0.00	0.00
Hunting licenses	6.86	4.43	0.00	0.00
Anything else for this trip	0.00	0.00	0.00	0.00
Total Cost for this hunting trip in				
Arkansas	87.43	22.21	120.71	110.85

Table H30. Mean expenditures for residents of Arkansas, where missing values were replaced with zero (n = 7).

Table H31. Mean expenditures for participants who had an expenditure listed for the category for all participants.

	In Arkans	sas County	Elsewhere i	n Arkansas_
Expense category	Mean (\$)	Standard Error	Mean (\$)	Standard Error
Automobile transportation (fuel, rental				
car, etc.) $(n = 59; 42)$	51.53	4.23	98.12	15.45
Other transportation (airplane, etc.) (n =				
6; 11)	292.50	83.50	651.91	251.55
Ammunition $(n = 57; 10)$	44.19	6.00	124.10	97.71
Hunting gear (clothing, guns, decoys,				
etc.) $(n = 67; 4)$	107.33	17.88	185.00	105.95
Shopping $(n = 46; 5)$	91.85	14.16	197.00	139.50
Lodging (hotel, camping, food, etc.) (n				
= 12; 6)	120.42	58.36	715.83	656.98
Restaurant meals $(n = 25; 19)$	44.20	8.50	39.47	5.75
Groceries (food, drinks, ice, etc.) (n =				
26; 13)	29.54	6.38	28.00	4.40
Guide fees/tips ($n = 69; 3$)	72.03	17.75	430.00	291.38
Hunting licenses $(n = 39; 4)$	47.90	4.62	110.00	63.38
Anything else for this trip $(n = 7; 2)$	1102.86	668.43	75.00	25.00
Total Cost for this hunting trip in				
Arkansas (n = 115; 56)	333.27	52.62	334.02	143.61

Table H32. Mean expenditures that occurred outside of Arkansas for a trip to the Monsanto property by both non-residents and all participants grouped.

Spent on trip out of state	Mean (\$)	Standard Error
Non-residents of Arkansas $(n = 136)$	174.21	29.77
All participants grouped ($n = 143$)	165.69	28.48

Table H33. Mean dollar amount that participants were willing to pay over what they expended for the trip before they would not have made the trip (n = 91).

Amount more willing to pay	Mean (\$)	Standard Error
All participants grouped	359.35	60.65

Table H34. The percent and frequency of ages reported by survey participants (Mean = 44.5).

Tuble 115 II The percent and	inequency of ages reported by survey participants (inean	1110)1
Age	Frequency	Percent
18-25	5	3.5
26-30	11	7.6
31-35	17	11.9
36-40	17	11.9
41-45	25	17.5
46-50	25	17.5
51-55	21	14.7
56-60	12	8.4
>61	10	7.0
Total	143	100.0

Table H35. The percent and frequency of gender reported by survey participants.

Gender	Frequency	Percent
Male	139	97.9
Female	3	2.1
Total	142	100.0

Income	Frequency	Percent
Under \$10,000	1	0.7
\$10,000-\$19,999	0	0
\$20,000-\$29,999	0	0
\$30,000-\$39,999	5	3.6
\$40,000-\$49,999	10	7.3
\$50,000-\$59,999	8	5.8
\$60,000-\$69,999	10	7.3
\$70,000-\$79,999	9	6.5
\$80,000-\$89,999	11	7.9
\$90,000-\$99,999	5	3.6
\$100,000 and ABOVE	79	57.3
Total	138	100.0

Table H36. The percent and frequency of the approximate annual household income before taxes reported by participants.

Table H37. The percent and frequency of the greatest level of education attained for survey participants.

Education	Frequency	Percent
Elementary	0	0.0
High School	20	14.0
College	89	62.2
Graduate School	34	23.8
Total	143	100.0

Table H38. The percent and frequency of ethnic backgrounds for survey participants.

Ethnic background	Frequency	Percent
White or Anglo	142	99.3
Black or African American	0	0.0
Native American or Alaskan Native	0	0.0
Hispanic	1	0.0
Other	0	0.7
Total	143	100.0

Table H39. The percent and frequency of participants who indicated they had something else to share about waterfowl hunting or management at the Monsanto Farm and Wildlife Management Center. The open ended comments are typed in Appendix I.

Anything else shared	Frequency	Percent
Yes	72	50.4
No	71	49.6
Total	143	100.0

APPENDIX I: Open-ended Comments from the Post-survey

Open-ended comments appear exactly as they were written on the back of the questionnaire. As part of our laboratory policy, all specific names of respondents and staff members were removed and replaced with "[X]" if an individual staff member was mentioned or "[The employees]" if multiple employees were mentioned.

10001 Had a great time!

- 10002 I have been hunting here since 1985 and have always enjoyed it. The club house has always been a favorite. The guides and cooks are the best. The hunting has always been up and down but I've always enjoyed it. Even if we didn't kill many ducks the experience in the blind was always great!!
- 10003 Excellent facility and hunting and people.
- 10006 One of the best hunts I've ever been on. I know water "low" in other parts of Ark. contributed a great deal to this. I really enjoyed the trip and hope for the opportunity to go again sometime.
- 10007 The guides were some of best I have seen. And fun to be around.
- 10008 I really enjoyed this trip on the Monsanto farm and wildlife management center, and look forward to coming back soon.
- 10009 How about some goose hunts?
- 10015 I would like to say that I enjoyed the trip very much. Hopefully I will be invited back in the hunting seasons to come. It was a very enjoyable experience, they need to keep up the good work that they are doing.
- 10019 One of the best duck hunts I have ever been on in my life
- 10023 I believe it is very well managed as it was a great experience. I hope to have the opportunity again.
- 10024 I had excellent time on this trip as with my previous trips to the property. [The employees] go out of their way to make it enjoyable for everyone. The food is first rate and the staff has always been friendly and helpful. It is an experience that I will never forget. Thank you for this opportunity.
- 10026 Thanks- great club and hunting- great guides and cooks!
- 10027 Great environment! Great experience! Great people! Great trip!
- 10029 I enjoyed this trip very much. I am not a real duck hunter but could become one now. Last week I purchased this trip on an auction/fundraiser so my son-in-law could experience this great outing. I hope to get to go along!
- 10030 We received the utmost respect by everyone and had a blast. [X] is a great host and if I

ID	Post-survey open ended comments
	never see him again I will always have fond memories of him and his staff. I hope to go back.
10032	Duck season was in a resting period so we could not hunt ducks!! Scheduling problems. But I had a great time hunting geese. Hope to get back down and hunt duck
10034	This is the best trip I've ever been on. Unfortunately we were unable to hunt ducks because we were there during the closed week but goose hunting was fun too. The conservation efforts by Monsanto are to be commended. The staff could not have been better!
10036	the operation is run in a professional manner
10038	I would like to know about other hunts you have to offer and price and different locations. I am big on deer hunting and turkey hunting, please send info, and thanks to the host that was there when I was hunting I forget his name but he had it going on
10040	great trip and good people
10049	Overall, a very nice place. I hope to have an opportunity to return.
10051	this hunt was my first, opportunity to hunt a managed area. I consider this truly to have been an experience of a lifetime. It was extremely enjoyable and the personell were very accomodating and nice. I'll never forget it.
10053	loved it. Can't wait to go back
10059	Great hunt! Ducks in the morning and geese in the afternoon perfect! Hunt!
10060	the people were very friendly and accommodating
10061	This place is fantastic!
10065	greater concern on the guides part to identify male birds before calling "kill those ducks!" to me its more of a challenge, especially on cloudy days or in poor light to shoot only drakes than merely shoot at a siloette that has the outline of a duck. I feel it is very important to protect the resource by not shooting the brown ducks when there is plenty of opportunity given in the time allotted to the mornings hunt to not be in such a hurry to limit out or total numbers. The quality of my hunt is determined with the total experience, not merely how many ducks I killed or how many times I got my gun off. I much prefer to share a great experience with good friends and show a neophyte how

outstanding job. In fact, I wish I could join their ranks.

wonderful this timber hunting can be. I'm not complaining. All in all the guides do an

- 10070 it's very important to keep the new management at the farm. New young ideas as well as youthful energy are very important to this farm and even its excitement. The "bood old boys club" was just going on the old worn youth. I have seen both the old and newthe new is much better. Monsanto has a wonderful resource in this property and I feel priveleged to have been invited to hunt there. Yes I have hunted a number of years in both public and private areas. There are improvements that can and should be made but for the most part my trip on the farm was quite enjoyable. I also feel that the farm is terribly under untilized. More effort should be made to utilize the facility not only during waterfowl season but year round. Let sales people win trips for themselves and others. Don't let the staff harvest the deer again let your staff win deer hunts. There are many ways to utilze their wonderful facility just use your imagination. But don't screw up the duck hunting. Thanks for the opportunity to experince it myself!
- 10080 I'd like to be invited back!
- 10083 I had a very enjoyable time at the Monsanto facility. All of the Monsanto employees treated our group first rate. We had a wonderful time and hope to be invited back in the future.
- 10085 this was my seasonal trip to Monsanto Farm. The management guides and cooks are wonderful. Safety in the field is very important. I don't know what you could do to make everything better.
- 10087 guides very polite and professional food and women preparing it were excellent very well ran facility
- 10097 this was my first waterfowl hunting experience and I thoroughly enjoyed it!
- 10099 Guides call too much
- 10100 this survey misses much of the point of hunting @ the Monsanto property. Little or no personal skills are exercised; hunters are just "guns," and no more. Such questions are irrlelevant. The Monsanto experience is all about networking among people, and little or nothing about the challenge and sport of hunting. Any pretense otherwise is a disservice to Monsanto, to this survey and to what "hunting" is supposed to be about. This view is not intended as a criticism, but as a statement of reality.
- 10103 everyone was 100% professionals. [The employees] at 150 gave it that "downhome feel." it was a beautiful place for a once in a lifetime hunt and I would love to come back if they would have me. Monsanto has had nothing but my praise ever since my return to Michigan. It was an experience that I will never forget. [X] and his dog gave duck hunting an excitement like it was opening day even though it was a few weeks into the season. We also shot the 2nd and third black ducks season. The food was unbelievable, I thank everyone for this experience!

- 10106 Would very much like to work with Monsanto to maximize the experience folks have at this family. What you all are doing is very much appreciated by our organization/waterfowl hunter.
- 10107 great trip!
- 10108 keep up the good work
- 10112 it was a wonderful opportunity and I hope I get the chance to do it again someday
- 10114 Great Lodge, very accomadating, friendly, helpful guides
- 10115 I had a great time and would love to be invited back. Thanks to all
- 10117 I had a great time
- 10118 Install board on top were in blinds scratched barrel resting on wire or provide gun rests. Change fast grass to equal timber color to bright
- 10120 very nice property and hunting experience, I think lack of water and time of season hampered harvest. Would definitely return if had the opportunity
- 10122 the Monsanto club is a real jewel for the hunting community; for wildlife biology; the conservation of waterfowl. Very professionally managed--well done
- born and raised in Arkansas and currently residing in Dallas, TX. Great farm with awesome people--very knowledgeable. No ducks in the area for these two days!
 Weather was great. Some of the best hunting in North America, just not good this day!
 Beautiful area and will definitely return
- 10129 we had an excellent time and hope to do it again
- 10131 I understand the reunion for our law duck harvested number was that in mid January ducks were simply not as plentiful as in December.
- 10132 our hunt was the next to the last weekend of the season. The warm winter has influenced the number of ducks that have moved that far south and the ducks that were present had been hunted all season and were very skidish about landing in blind areas. Maybe more blinds that could be alternated and rested 1 or 2 days. Also, it would be nice to make an area where one could shoot days the afternoon before first hunt. I think hunters would gladly pay for this option.
- 10144 greatly enjoyed the hunting experience [the employees] do a great job.

- 10145 hunting from 6:45 to 9 am is too short to call it a hunt. I thought the guides were union type. When 9 am arrived everything stopped. 6 to a blind is unsafe and too crowded
- 10148 costs on #19 do not reflect actual cost since this trip was won on the Monsanto Corporate United way auction by my wife.
- 10149 I think longer shooting hours should be considered when hunting late in the season, when there are fewer birds and their harder to work. This may give a few more shooting opportunities. (I'm referring to the hunt ending at 9am.)
- 10155 when the hunting is poor, set up afternoon hunts, ie waterfowl or other. Perhaps sporting clays.
- 10158 I think Monsanto has a very well managed waterfowl program. I also would like to say that I was very impressed with how hard all the guides worked to make sure that all hunters in camp were given all opportunities to have a successful hunt under the changing weather conditions. I am looking forward to returning next year if possible. If I had to give any advice or opinion on one thing that I thought might need to be revaluated is transportation to and from lodge to the hunting areas. Camper shell- on truck.
- 10161 I felt that the waterfowl was managed very well but hunting needed to be moved around from timber to field to maximize the harvest.
- 10164 it's a nice lodge, but a lot of other companies have nice lodge. Their wildlife management is great. Their lodge is nice but not as nice as they think it is
- 10167 Very nice people that work there. I was very impressed.
- 10169 we bid on our hunt thru the united-way, so basically our hunt was free including airfare prov. By Monsanto also auto and licenses the only thing I did not enjoy was the sleeping accomodations some rooms 2 some 3. did not, like sharing bathroom and showers with people I did not know. Monsanto should make living quarters equal not where some get special treatment.
- 10170 Great Job!
- 10172 We had a good time, everyone was very nice and the food was great, just wish we could have killed more ducks. Thanks again

- 10174 around home we would make more effort to hide our truck. Sitting in a great Blind in good hunting environment only to look at and see a white truck thru the trees takes a little art of it. Covers to drive under or drop the hunters and walk back would work, because obviously some of us hunters aren't in the best shape and might not could stand the exercise. I wonder if some med. Height cover grown on dikes and edges with some grain unharvested and stuff flooded or flooded at will in late season would congregate more waterfowl to your areas or at least provide more hunting area to allow rest for your timber or increase your participation. Many times it pays to do things that make your spot different especially from the air. There are so many geese that I could see them being a problem especially in open areas. Takes a lot of food to hold up a goose heavy hunting especially for the geese just to keep them off your open food so it will last. I didn't get enough of Arkansas. Was the first time out of Carolinas for me. This was a great experience I would love to pal around with the guides and managers in their daily duties.
- 10178 my only dissatisfaction with the hunting at Monsanto was the arbitrary stop time of 9 am. That gave us just over 2 hours of hunting. Yes, I know that early stop times help keep the birds in the area. However, I have been on several other guided hunts in the Stuttgart area that stopped at 10:30 or11. I would not return to hunt 2 hours per day.
- 10179 we were surprised that hunts last only until 9 am. w/o the goose hunt on Saturday it would have made for a very long and wasted day
- 10180 it would be nice to have a schedule of events posted in the lodge of the time of arrival
- 10181 thanks to everyone at Monsanto Center had a wonderful time!
- 10182 The entire staff are friendly and work hard to make sure everyone has an enjoyable trip.
- 10183 excellent- didn't shoot any waterfowl and I expected to. However, hunting to me is not about harvesting game. Great accomodations, meals and personnel. I'll be back
- 10186 great experience
- 10187 Had a great experience at the Monsanto center. Something I normally wouldn't have done.