

The 2013 Texas Rural Survey: Food, Agriculture, and the Natural Environment Report



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Rural Texas

Of the 25.1 million people living in Texas, 3.8 million (15.3%) live in rural areas.¹ According to the Census Bureau, the land area of Texas is approximately 261,232 square miles, which approaches the area covered by New Mexico, Oklahoma, Arkansas, and Louisiana combined. With such a large geographic expanse, much of the population is concentrated in dense urban areas, whereas the 15.3 percent of the population residing in rural areas is spread across 96.7 percent of the state.² Located throughout these rural spaces are a majority of the industrial, agricultural, cultural, and natural resources that drive the state's development and ultimately link urban and rural people and places.

As rural places face the significant social and economic challenges that accompany population decline, it is imperative that researchers work to understand, strengthen, and maintain rural areas. In 2012, the Center for Rural Studies at Sam Houston State University conducted the first Texas Rural Survey. Between August and October 2012, Texas residents from 22 rural places³ were randomly selected to complete a questionnaire. The findings from the study were used to develop a series of summary reports regarding public services and community amenities, public perceptions of urban and rural living, economic development strategies and efforts, medical and healthcare services, and natural disaster issues.

The results from the 2012 survey prompted an interest in a subsequent study. In 2013, the Texas Rural Survey was revised and sent to residents of 22 additional rural Texas places. This report explains the methodology and summarizes the findings from one topical section of the study.

The 2013 Texas Rural Survey

Between June and August 2013, a random sample of 5,608 individuals living in 22 Texas rural places were contacted and asked to participate in the 2013 Texas Rural Survey. This report explains the methodology and summarizes the findings from one topical section of the study.

Methodology

Study Site Selection

In 2010, according to the Texas State Data Center, there were 1,752 places in Texas with 1,511 (86%) of those places having a population of 10,000 or less. Following the methodology used in the 2012 Texas Rural Survey, one place within each of three population categories (499 or fewer, 500-1,999, and 2,000-10,000) was selected as a study site within each of the seven Rural Economic Development Regions as classified by the Texas Department of Agriculture. In addition, because there are a large number of places in the 499 or fewer population category in the West Region, an additional study site was added to the sample. In total, 22 places were randomly selected as study sites (see Appendix). Study sites included both incorporated places (concentrations of

^{1, 2} U.S. Census Bureau. 2010a. "2010 Census Urban Lists Record Layouts."
http://www.census.gov/geo/reference/ua/uallists_la_yout.html

³ For our purposes, the term "places" refers to incorporated places and census designated places.

population having legally defined boundaries) and census designated places (concentrations of population that are locally identifiable by name but not legally incorporated).⁴

Data Collection

Following the multiple contact approach of the tailored design method,⁵ standard self-administered mail surveys were distributed to households in the study site locations. In early June 2013, an informational letter was mailed to a stratified random sample of 5,608 households across the 22 study sites. The informational letter, printed in English on one side and Spanish on the other, notified residents that their household had been randomly selected to participate in an upcoming study focused on rural Texas. The letter contained instructions for completing the questionnaire in one of two ways: (1) online at the provided URL, or (2) by returning the mailed questionnaire they would soon receive. Of the selected households, no rejections to participation in the study nor mistaken addresses were identified. Therefore, the final sample size remained at 5,608.

Later in June 2013, the survey questionnaire was mailed to the sampled households. In order to obtain a representative sample of individuals within the households, the cover letter requested that the adult in the household who had most recently celebrated his or her birthday would be the one to complete and return the survey. The 52-item survey questionnaire was offered in English and Spanish as a self-completion booklet and online, and it required approximately 50 minutes to complete. After the initial survey mailing and two follow-up mailings during July and August, 757 completed questionnaires⁶ were returned for a response rate of 13.5 percent.

Food, Agriculture, and the Natural Environment

Agriculture is one of Texas's most important economic sectors, producing nearly \$100 billion in annual output (TDA 2014). Understanding and protecting farmers and farmland is critical for the success of rural Texas. A recent wave of widely popular books and films make serious allegations about contemporary food production (Foer 2009; Pollan 2006, 2009; Schlosser 2001; among others). Related academic efforts vary from calls for animal rights, liberation, and the abolition of animal agriculture (Francione 2000; Regan 1983; Singer 1975) to calls for internal reform of modern methods (Grandin 2008, 2010; Rollin 1995, 2008; Scully 2002, 2005). These emotionally charged debates point to a growing concern over how food is produced, who produces it, and the treatment of animals in the process. These concerns have led many states to consider significant agricultural reforms that may be harmful to agricultural economies and counterproductive to the welfare of both the environment and animals.

Most research examining perceptions of agriculture focuses on urban/rural differences. These studies note that urban populations tend to support more regulation of agriculture and have greater concern for animal welfare than their rural counterparts (Kendall, Lobao, and Sharp 2006; Deemer and Lobao 2011). Unfortunately, these studies assume rural populations to be homogeneous. This report represents an initial attempt to understand how populations in rural Texas vary in their perceptions of farmers and farming, animal welfare, food safety, and agricultural regulations.

The key findings in this report show that respondents overwhelmingly support protecting farmers, farmland, and basic parameters for

⁴ U.S. Census Bureau, 2012. "Geography." <http://www.census.gov/geo/index.html>

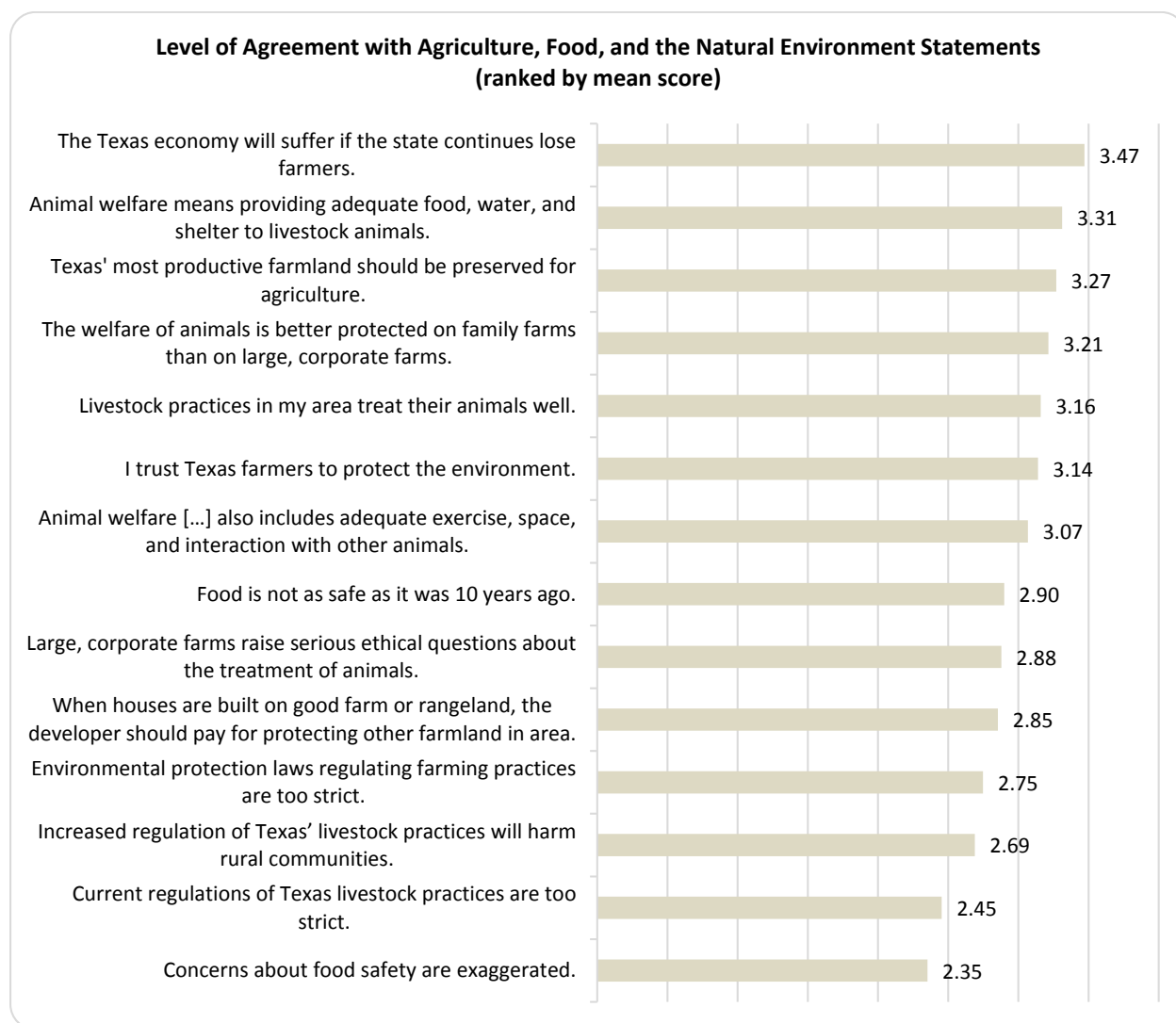
⁵ Dillman, Don A., Jolene D. Smyth, and Leah Melani Christian. 2009. *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method*. Hoboken, NJ: John Wiley & Sons, Inc.

⁶ One household requested a Spanish mail survey, and one completed the Spanish version online. In total, 701 completed the mail survey and 56 completed the online survey.

animal welfare, although, significant differences exist among people from places of different population sizes and between women and men. Gender differences also exist regarding concern for food safety. Only one significant difference was found by region. The report concludes with a discussion of policy implications.

Rural Texas Attitudes: Farming, Animal Welfare, Food Safety, and Agricultural Regulations.

The 2013 Texas Rural Survey included 14 statements intended to discern rural Texans' attitudes towards four topics: farmers and farming, animal welfare, food safety, and agricultural regulations. Respondents were asked to evaluate statements based on these four overlapping main topics by indicating that they "strongly disagree" coded as 1, "disagree" coded as 2, "agree" coded as 3, and "strongly agree" coded as 4. In the following figures, the higher the mean (average) score, the higher the level of agreement by respondents for each statement.



The graph on the previous page shows each of the 14 statements ranked by level of agreement. The data show that respondents felt strongly that “The Texas economy will suffer if the state continues to lose farmers.” This statement received the highest mean score (3.47 out of a possible 4). Animal welfare was the second highest ranked issue, as the statement “Animal welfare means providing adequate food, water, and shelter to livestock animals” had the second highest ranked mean score (3.31). This is an important finding because rural populations are often said to have lower levels of support for animal welfare than their urban counterparts. Although the study did not compare urban and rural populations, the data did indicate that support for animal welfare was also a high-ranking issue in rural places. The third highest ranked item was “Texas’ most productive farmland should be preserved for agriculture” (mean score of 3.27) and the fourth was “The welfare of animals is better protected on family farms than on large, corporate farms” (mean score of 3.21). These measures show that rural Texans have significant concern for the loss of agricultural land and the welfare of animals on large corporate farms.

Of the statements that received the least support, “Current regulations of Texas livestock practices are too strict” was ranked second to last, with a mean score of 2.45. This finding indicates that rural Texans in the sample do not feel producers are overburdened by livestock regulations. Given the relatively high level of concern for animal welfare and feelings that small family farms better protect animal welfare, rural Texans’ appear to see protecting the welfare of livestock as an important issue. The statement that received the least amount of support, “Concerns about food safety are exaggerated,” received a mean score of 2.35. Together with the item “Food is not as safe as it was 10 years ago” (mean score of 2.90), this finding suggests that food safety concerns are

not especially high for rural Texans. However, as demonstrated below, there were important and significant differences found between women and men on this issue.

Differences among Rural Texans

The above numbers look at rural Texans’ attitudes as a whole. Given Texas’s geographic size and diverse population, differences among rural Texans should also be noted. In this section, means among three population categories (499 or less, 500 to 1,999, and 2,000 to 10,000) are compared.⁷ The data show that attitudes toward four statements were statistically different depending on the respondents’ population category.

Of the four items showing statistically significant differences among population categories, two items related to animal welfare exhibited the strongest differences. The statement “Animal welfare means providing adequate food, water, and shelter to livestock animals” showed statistically significant differences between the population categories. Respondents from the smallest population category (499 or less) had a mean score of 3.39 compared to those in the largest population category (2,000 to 10,000), who had a mean score of 3.20. There was also a statistically significant difference between the medium-sized category (500 to 1,999), with a mean score of 3.35, when compared to the largest population category (mean score of 3.20). These data indicate that those in the largest population category were the least likely to support this basic statement on animal welfare and those in the smallest population category were most likely to support this statement. This finding differs from typical patterns of animal welfare support that show people from larger population centers are more likely to support animal welfare than those in smaller places.

Statistically significant differences were found among three additional statements. These

⁷ A comparison of means one-way ANOVA test was run along with a Tukey Post Hoc test for significance.

included “Livestock practices in my area treat their animals well,” “Increased regulation of Texas’ livestock practices will harm rural communities,” and “Current regulations of Texas livestock practices are too strict.” For these statements, statistical differences in mean scores existed only between the smallest population category and the largest population category, with the respondents in the smallest population category being more likely to agree with the statements. These findings should remind policy makers that rural Texans vary on a multitude of issues and should not be considered as a homogeneous group.

The following table presents each statements’ mean scores within each population category and for the overall sample. For example, the

statement “The Texas economy will suffer if the state continues to lose farmers” had the largest mean score for the overall sample compared to the other statements, therefore it was ranked first. Looking across the row, the table shows the statement was also ranked first for each of the three population categories. The biggest difference in the rankings relate to the statement “Food is not as safe as it was 10 years ago.” It was ranked eighth on the lists for the overall sample and the medium-sized and the largest population category but was ranked eleventh for the smallest population category. There was less agreement with that statement for those in the smallest population category compared to the others.

Table 1: Food, Agriculture, and the Natural Environment Issues, by Three Population Categories

Food, Agriculture, & Natural Environment	Overall Sample		≤499		500 to 1999		2000 to 10,000		Sig.
	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	
The Texas economy will suffer if the state continues to lose farmers.	1	3.47	1	3.48	1	3.52	1	3.40	
Animal welfare means providing adequate food, water, and shelter to livestock animals.	2	3.31	2	3.39	2	3.35	2	3.20	**
Texas’ most productive farmland should be preserved for agriculture.	3	3.27	3	3.32	3	3.31	3 ^T	3.17	
The welfare of animals is better protected on family farms than on large, corporate farms.	4	3.21	4	3.30	4 ^T	3.19	3 ^T	3.17	
Livestock practices in my area treat their animals well.	5	3.16	5	3.24	4 ^T	3.19	5 ^T	3.05	**
I trust Texas farmers to protect the environment.	6	3.14	6	3.20	6	3.18	5 ^T	3.05	
Animal welfare [...] also includes adequate exercise, space, and interaction with other animals.	7	3.07	7	3.12	7	3.06	7	3.02	
Food is not as safe as it was 10 years ago.	8	2.90	11	2.85	8	2.91	8	2.92	
Large, corporate farms raise serious ethical questions about the treatment of animals.	9	2.88	8	2.91	9 ^T	2.88	9	2.86	
When houses are built on good farm or rangeland, the developer should pay for protecting other farmland in the area.	10	2.85	9	2.89	9 ^T	2.88	10	2.78	
Environmental protection laws regulating farming practices are too strict.	11	2.75	10	2.88	11	2.70	11	2.69	
Increased regulation of Texas’ livestock practices will harm rural communities.	12	2.69	12	2.82	12	2.69	12	2.58	*
Current regulations of Texas livestock practices are too strict.	13	2.45	13	2.58	13	2.46	13	2.34	*
Concerns about food safety are exaggerated.	14	2.36	14	2.37	14	2.41	14	2.28	

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$. T = tied rank.

Coding: 1 = strongly disagree; 2 = disagree; 3 = agree; and 4 = strongly agree.

Given the geographic range of Texas, significant differences among regions can be expected. To test this, a comparison of mean scores was run among the seven regions designated by the Texas Department of Agriculture. See the appendix for a map of these regions (North, North Central, North East, South, South Central, South East, and West). This test only resulted in one statistically significant finding. For the item “The welfare of animals is better protected on family farms than on large, corporate farms” there was a significant difference between the North region (mean score of 3.47) and both the South and South East regions (mean scores of 3.10 and 3.14, respectively).⁸

Gender Differences among Rural Texans

Rural Texans’ responses varied not only by population and region but also by gender. Results from the survey showed that men and women differed on 10 of the 14 statements regarding farmers and farming, livestock practices and animal welfare, food safety, and agricultural regulations. This section discusses gender differences across each of the four central themes: farmers and farming, livestock practices and animal welfare, food safety, and agricultural regulations.⁹

Focusing on the topic farmers and farming, statistically significant differences were uncovered between women and men. Generally, women were more concerned than men about the loss of farmers and the loss of farmland to suburban/urban development. Specifically, women were more likely to agree that “The Texas economy will suffer if the state continues to lose farmers” (mean scores of 3.55 for women and 3.37 for men) and “When houses are built on good farm or rangeland, the developer should pay for protecting other farmland in the area” (mean scores of 2.92 for women and 2.77 for men).

Regarding the broad category of livestock practices and animal welfare, three statements exhibited statistically significant differences. Generally, women were more concerned about animal welfare than men. Women were far more likely to agree with the statements that “The welfare of animals is better protected on family farms than on large, corporate farms,” (mean scores of 3.30 for women and 3.12 for men), “Animal welfare means more than providing adequate food, water and shelter; it also includes adequate exercise, space, and interaction with other animals,” (mean scores of 3.20 for women and 2.92 for men), and “Large, corporate farms raise serious ethical questions about the treatment of animals,” (mean scores of 2.96 for women and 2.80 for men).

Turning to the issue of food safety, there were two statements that were statistically significant. Women were more likely to agree with the statement that “Food is not as safe as it was 10 years ago” (mean scores of 3.05 for women and 2.72 for men), and they were less likely to agree that “Concerns about food safety are exaggerated” (mean scores of 2.29 for women and 2.45 for men).

When it came to questions about agricultural regulations, men were more likely than women to claim that “Environmental protection laws regulating farming practices are too strict” (mean scores of 2.68 for women and 2.82 for men). Women were also less likely to agree with the statements that “Increased regulation of Texas’ livestock practices will harm rural communities,” (mean scores of 2.63 for women and 2.76 for men) and “Current regulations of Texas livestock practices are too strict,” (mean scores of 2.38 for women and 2.54 for men).

^{8,9} A comparison of means one-way ANOVA test was run along with a Tukey Post Hoc test for significance.

Table 2. Differences in Agreement Between Women and Men, by Mean Score

Food, Agriculture, and Natural Environment	Overall Sample		Women		Men		Sig.
	Rank	Mean	Rank	Mean	Rank	Mean	
The Texas economy will suffer if the state continues to lose farmers.	1	3.47	1	3.55	1	3.37	***
Animal welfare means providing adequate food, water, and shelter to livestock animals.	2	3.31	2	3.34	2	3.28	
Texas' most productive farmland should be preserved for agriculture	3	3.27	4	3.27	3	3.26	
The welfare of animals is better protected on family farms than on large, corporate farms.	4	3.21	3	3.30	5 ^T	3.12	*
Livestock practices in my area treat their animals well.	5	3.15	7	3.14	4	3.17	
I trust Texas farmers to protect the environment.	6	3.14	6	3.16	5 ^T	3.12	
Animal welfare [...] also includes adequate exercise, space, and interaction with other animals.	7	3.08	5	3.20	7	2.92	***
Food is not as safe as it was 10 years ago.	8	2.90	8	3.05	12	2.72	***
Large, corporate farms raise serious ethical questions about the treatment of animals.	9	2.88	9	2.96	9	2.80	*
When houses are built on good farm or rangeland, the developer should pay for protecting other farmland in the area.	10	2.85	10	2.92	10	2.77	*
Environmental protection laws regulating farming practices are too strict.	11	2.75	11	2.68	8	2.82	*
Increased regulation of Texas' livestock practices will harm rural communities.	12	2.69	12	2.63	11	2.76	*
Current regulations of Texas livestock practices are too strict.	13	2.45	13	2.38	13	2.54	*
Concerns about food safety are exaggerated.	14	2.36	14	2.29	14	2.45	*

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

Coding: 1 = strongly disagree; 2 = disagree; 3 = agree; and 4 = strongly agree.

T = tied rank.

Concluding Comments

Key findings in this report show respondents overwhelmingly support protecting farmers, farmland, and basic parameters for animal welfare. Over 85 percent of respondents indicated that animal welfare is better protected on family farms than on large corporate farms, and less than half (41.6 percent) of respondents believed current regulations of Texas livestock practices are too strict. Women also appeared to take food safety concerns seriously. While findings did not significantly vary by region, important differences were found by population size and gender.

Findings show that people in the smallest population category (499 or less) were more likely than people in the medium (500-1,999)

and large (2,000-10,000) categories to support statements regarding basic animal welfare and were more likely to agree livestock producers in their local area treat their livestock well. People in the smallest places were also more likely than people in larger places to be concerned about increased regulations, although these concerns were not especially strong, and they varied by gender. For example, men were significantly more likely than women to agree that environmental laws regulating farming were too strict and were more concerned than women about increased regulation of livestock practices. On the other hand, women were considerably more concerned than men about the loss of farms and were more likely to support high standards for animal welfare. Additionally,

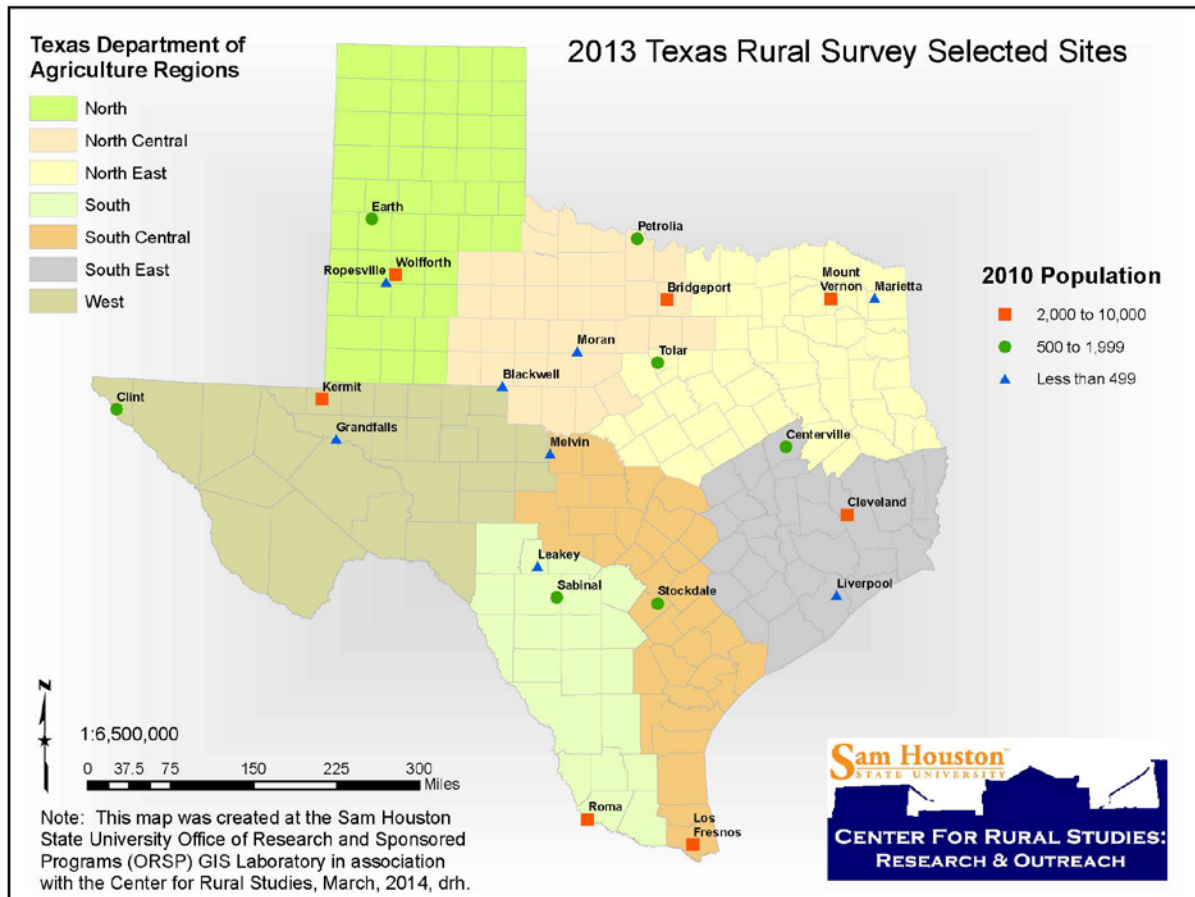
women were more likely than men to be concerned about food safety and the treatment of animals on corporate farms. Women were also more likely than men to support protecting farmland from development.

While political and policy discussions of agriculture and animal welfare tend to focus on a significant rural/urban divide, the study shows important variations within rural Texas. Respondents' answers varied by population size and gender on key measures. These differences are important for governmental and non-governmental organizations to consider when working on areas relating to agriculture and animal welfare.

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Appendix



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