

Making a Difference

2014 – Clay County Range & Pasture Management for Beef Cattle – Outcome *Developed by Missy Hodgins, CEA – Ag/Natural Resources, Clay County*

Relevance With approximately 37,000 head of beef cows, beef cattle production is the highest ranked agricultural commodity in Clay County and accounts for about 90% of total gross income. Rangeland, which accounts for about 80% of total acres, is vital to beef cattle producers. There is also acreage of improved grasses for forage and hay production and acreage of small grains planted primarily for grazing. Marketing quality beef is dependent upon producer's ability to efficiently manage their forage resources, nutrition and reproduction, range management, economic risk management, supplementation, mineral nutrition, and application of new technologies. A producer's ability to effectively manage these factors will determine the value of the calf or stocker they produce. The Clay County agriculture program area committee along with producer input is the bases of this educational program to improve beef production. Recent drought has created issues with quality forage, brush and weed control, supplementation, herd health, reproduction, and timing of rebuilding herds. These issues will continue to be the focus of education in the near future.

Response Texas AgriLife Extension Service in Clay County worked with the Clay County Beef Cattle Committee to develop the following educational programs to educate producers in order that they become more knowledgeable, make informed decisions and adopt best management practices that insure the proper management of resources. The following programs were implemented to address these issues:

- **News Articles**, provided to local media sources discussing current issues and relevant topics concerning natural resource management and technical subject matter information on range and pasture management. (6 releases – January through December)
- **Ag Newsletter**, shared quarterly with producers via email, mail, local businesses and personal contact. Topics pertain to management, current issues and timely recommendations. (4 newsletters, January through December)
- **Texoma Ag Seminar**, annual event offered to agricultural producers. Topics for this year included the mineral supplementation programs, pasture weed control and forage quality and its role in reproductive performance. Vendor sponsorship was \$900. February – 176 attended. *Partial Cost Recovery task*
- **Individual Ranch Visits**, conduct visits with producers as needed to address topics included in this outcome initiative. (24 visits conducted January through December)

Results An evaluation instrument was utilized to measure programmatic impact from these programs. The results are divided into 3 sections of knowledge level change, anticipated changes and intentions to adopt and economic value of information. A total of 11 of 30 returned the instrument at a response rate of 36.67%. The results are as follows:

Knowledge Level Change. Mean value change¹ was measured using a retrospective post evaluation instrument.

TOPICS	Mean Value BEFORE	Mean Value AFTER	Mean Change	% Change ²
The impact of nutrition and health on reproduction efficiency.	2.36	3.82	1.46	61.86
Weed and brush identification.	2.27	3.55	1.28	56.39
Factors affecting nutrient value of forages.	2.36	3.55	1.19	50.42
When and under what conditions to use herbicides.	2.36	3.54	1.18	50.00
Effective timing and application of herbicides.	2.45	3.54	1.09	44.49
Mineral supplementation and a cow's need.	2.55	3.64	1.09	42.75
Nutrient value of available feedstuff.	2.64	3.64	1.00	37.88

¹Level of understanding = 1-Poor, 2-Fair, 3-Good, 4-Excellent

²Change was determined by the following calculation: (after % - before %)/before % * 100. Change indicates the mean value difference between the before and after measurement.

Anticipated Changes and Intentions to Adopt. This shows clientele's intended behavior changes based on information received through educational programs:

- 5 of 11 (45.45%) said that based on information received they would use recommended supplemental feeding practices to meet nutritional needs.
 - ❖ One was undecided and 5 had already adopted these practices.
- 8 of 11 (72.73%) said that based on information received they would adopt recommended brush and weed control practices.
 - ❖ Three had already adopted these practices.
- 7 of 11 (63.64%) said that based on information received they would use body condition scores to determine nutritional needs of beef cattle.
 - ❖ Four had already adopted these practices.

Economic Impact. This shows how much value clientele placed on attending these educational programs:

- 9 of 10 (90%) anticipate benefitting economically by attending the Texoma Ag Seminar.
 - ❖ Five (38.46%) anticipated economic benefit via increased production, 2 (15.38%) to improved marketing strategies and 6 (46.15%) to reduced input costs.
- A total of 49,215 acres was represented with an average of 4,921 acres per producer surveyed.
- 5,713 head of beef cattle was represented with an average of 635 cows per producer surveyed.

Summary Results indicate that the Natural Resource Management Program in Clay County met its objectives of increasing knowledge in the areas of range and pasture management and effectively evaluating and adopting research-based technology applications and best management practices for sustainable and profitable livestock systems.

Special thanks to the following experts for presenting at these events: Gerald Hobson, Dupont; Dr. Ted McCollum, A&M AgriLife Research and Extension; and Tony Ballinger, Moorman's.

Landowners and managers gain knowledge and will thus make more informed decisions and adopt best management practices that insure the proper management of natural ecosystem resources through stewardship education in order to support sustainability of those resources.

The Texas A&M AgriLife Extension Service engages landowners and managers in programs that teach how to maximize rangeland resources. Proper management of rangeland resources creates public value by improving ranch income and strengthening property values, which in turn benefit local tax bases and the state's economy.

REVERSING THE DECLINE OF QUAIL IN TEXAS

Result Demonstration Report

Texas Quail Index

Texas A&M AgriLife Extension Service

Clay County

Cooperator: Brent Durham

Missy Hodgin, County Extension Agent for Clay County

Becky Ruzicka, Extension Associate, Wildlife and Fisheries Department

Dr. Dale Rollins, Statewide Coordinator, Reversing the Quail Decline Initiative

Background and Objective

The decline of bobwhite and scaled quail across their historic ranges has been an ongoing and pervasive problem for the last 20 years. Texas, which was once thought of as being the last stronghold for excellent quail populations, has experienced the same declines as the rest of the southeast in the last 20 years. The last 4 years have been some of the lowest on record (Figure 1). The Texas Quail Index (TQI) is a large-scale Texas A&M AgriLife Extension demonstration effort designed to raise awareness of “quail decline” in Texas by increasing community involvement and giving landowners the tools they need to successfully monitor quail on their property. Engaging in an active quail monitoring program allows landowners to objectively assess the effectiveness of their land management actions, make educated decisions on harvest quotas, and identify weak links in their habitat that could

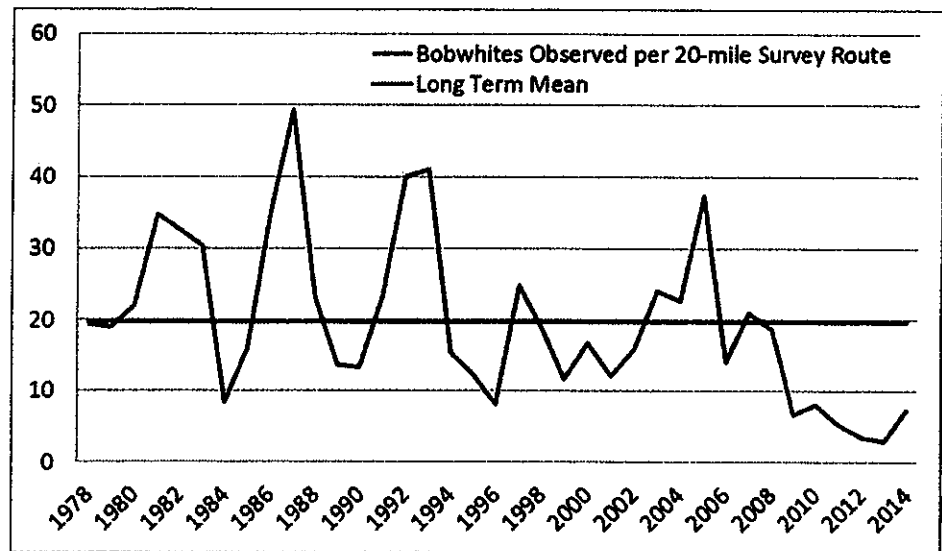


Figure 1. Texas Parks and Wildlife bobwhite quail forecast since 1978 shows the overall decline of quail. The last 4 years have been some of the lowest on record. http://www.tpwd.state.tx.us/huntwild/hunt/planning/quail_forecast/forecast

be improved to benefit quail. Statewide there are 36 counties participating in TQI (Figure 2) and a variety of different stakeholders, including: private land owners, Texas Parks and Wildlife (TPW) personnel, Natural Resource Conservation Service (NRCS) personnel, U. S. Fish and Wildlife Service (USFWS) personnel, and Texas Master Naturalists (TMN).

Methods

At the outset of the program, teams established 7-mile long permanent transects with 8 permanent “mile marker” locations from which to collect data for the duration of the project (Figures 3, 4). Teams were responsible for collecting data on 7 different metrics to assess the quail population level and habitat factors that affect quail populations on their site: spring call counts, dummy nests, predator surveys, habitat evaluations, roadside counts, fall covey counts, and rainfall totals.

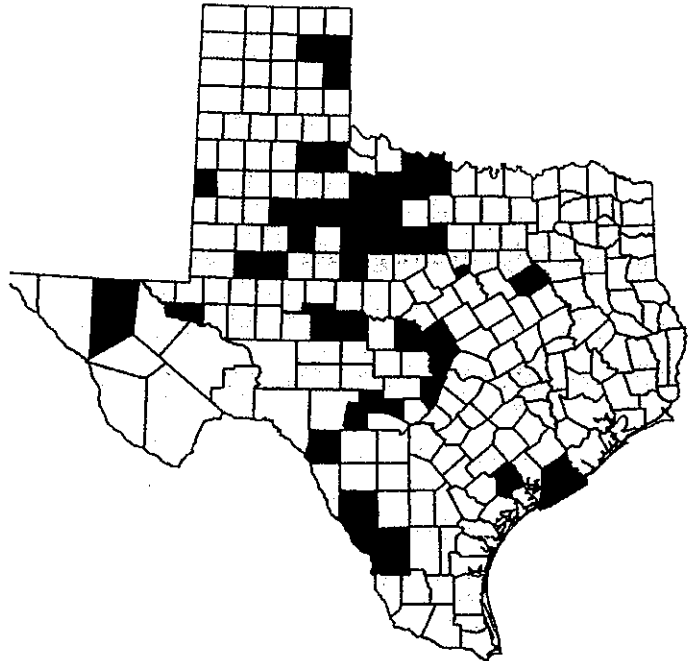


Figure 2. Active TQI participating counties shaded in black. There are 36 total statewide representing the Rolling Plains, High Plains, Edwards Plateau, South Texas Plains, Trans Pecos, and Gulf Coast Prairies ecoregions.

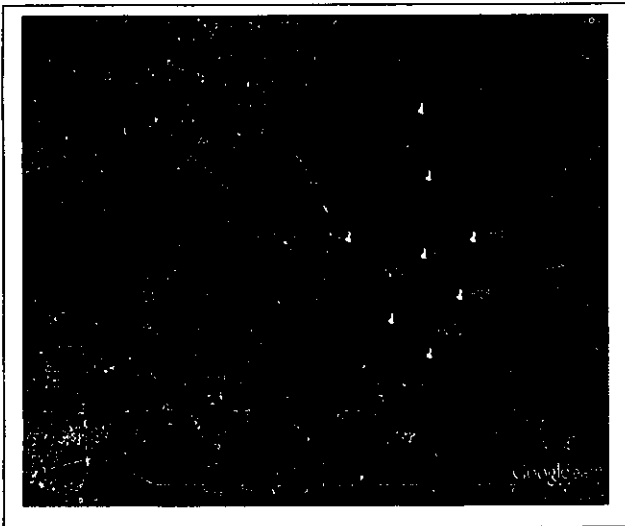


Figure 3. Google Earth image of transect location on study in Clay County.

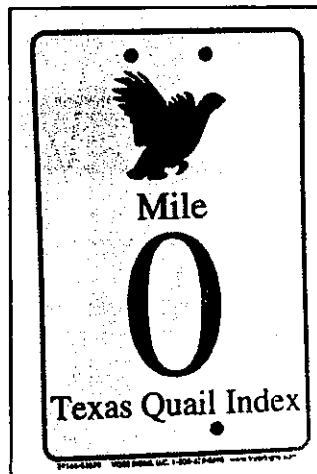


Figure 4. Mile marker placard used on the TQI. Permanent monitoring locations are essential for comparing data across years.

Spring Call Counts Both bobwhite and scaled (blue) quail males produce distinctive calls during the breeding season (Figure 5). The number of birds calling in a particular year is a good indication of the reproductive capital expected for that year both in terms of breeding effort and (less so) population size. Three spring call counts were conducted during May—June. Participants recorded the number of calling males they heard at each mile marker over a 5-minute period. These data were then averaged to obtain an estimate of the average number of calling birds per mile marker for comparison across the transect and among sites statewide.



Figure 5. Calling male bobwhite quail. Photo courtesy of Russel Graves.

Dummy Nests Nesting success is of critical importance to the long-term viability of quail populations. As a short-lived species with a high mortality rate, quail populations depend on a high number of new individuals being added each year in order to increase. However, suitable nesting habitat is often the weakest link in quail habitat statewide. Dummy nests are an excellent tool to evaluate the predator and nesting habitat context on their property as it pertains to quail during breeding season. Dummy nests are simply chicken eggs used to mimic an actual quail's nest placed in locations that quail would select as nest sites (Figure 6). Teams set out 4

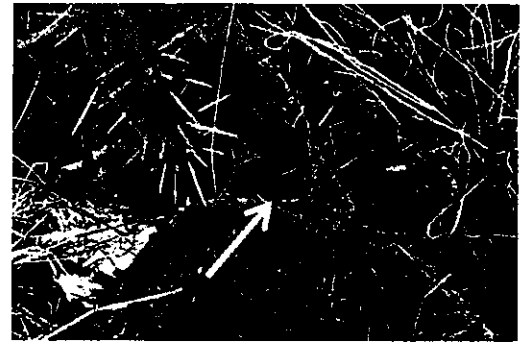


Figure 6. Dummy nest concealed in prickly pear. Prickly pear makes an excellent nesting substrate; nests in prickly pear typically survive at a higher rate than those in grass.



Figure 7. Estimating the amount of nesting cover by walking a transect and counting the number of suitable nesting structures rooted within arm span.

lines of 6 dummy nests during the month of June and monitored the nests at 14- and 28-days. Nests were recorded as intact or depredated. If the nests were depredated, teams described the eggshell remains and determined the most likely predator species based on the eggshell evidence (and related sign) left at the nest site. The dummy nest transects were also used to estimate the amount of suitable nesting cover per acre by walking a straight

line along the transect and counting the number of suitable nesting structures rooted within one person's arm span (Figure 5).

Predator Surveys In addition to dummy nests, game cameras were also used to monitor the relative abundance of predators and determine which nest predator species were present on the property. Predators can account for upwards of 80% of nest failures in ground-nesting birds. The most common types of nest predators are raccoons, skunks, and other “mesomammal” predators. Feral hogs can also attribute to nest failures in quail. Eight Bushnell Trophy Cam game cameras (Model 119436, Bushnell Outdoor Products, Overland, KS) were deployed for 15 days during the month of July. Cameras were set up approximately 24 inches off the ground on posts along ranch roads at a 45 degree angle to the road to provide the best field of view and to “capture” common nest predators as they were moving from one area to another (Figure 8). The number of separate predator observations was recorded as well as the species of predator observed.

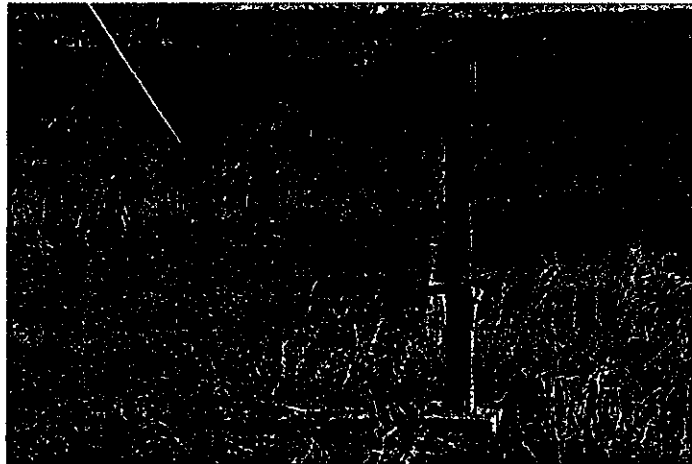


Figure 8. Camera set up at a 45 degree angle to the road to provide the best field of view and to “capture” common nest predators.

Habitat Evaluations Teams evaluated the overall quality of habitat along the transect using a formal habitat evaluation (Bobwhite quail version available at <http://wildlife.tamu.edu/files/2013/12/Habitat-Evaluation-Bobwhite.pdf> or Bobwhite Habitat Evaluation in the iTunes app store; Scaled quail version available at <http://wildlife.tamu.edu/files/2013/12/Habitat-evaluation-Scaled.pdf>). This habitat evaluation is designed to address the four main needs of quail habitat: diversity and percent of woody plants, availability and diversity of food, percent cover of suitable nesting habitat, and the interspersed of those items on the landscape. The habitat scores for each mile marker were compared to measures of quail population abundance. The limiting habitat factors highlighted by the evaluations were also quantified.

Roadside Counts Teams conducted 3 roadside counts in September. Roadside counts are used as a measure of relative abundance for the quail population. Texas Parks and Wildlife conducts roadside counts statewide every year to prepare their annual quail forecast (see figure 1). Counts for TQI were conducted during the morning and late-afternoon hours by driving a seven-mile route at less than 20 mph on the dirt ranch roads and simply counting the number of quail observed (Figure 9). From these data, the number of quail observed per mile was calculated. This rate was compared among sites in the TQI program and could be compared among multiple years of data on the same site (provided the route remained the same).

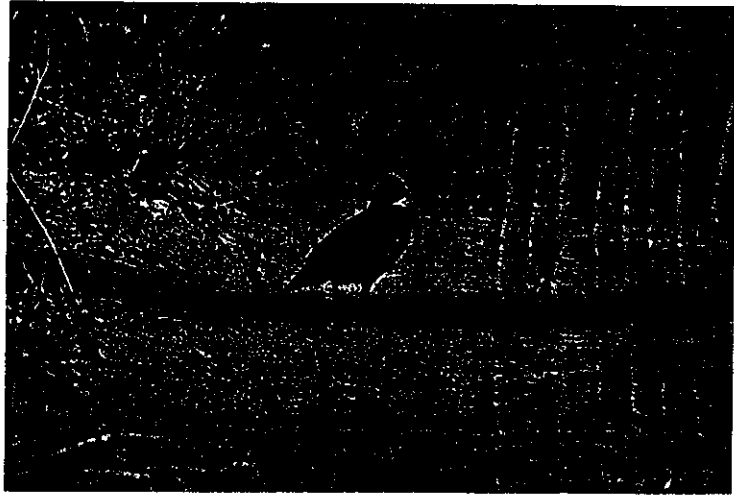


Figure 9. Male bobwhite quail observed during a roadside count. Photo by Becky Ruzicka.

Fall Covey Call Counts Once bobwhite quail have concluded breeding season and returned to coveys, each covey will make a distinctive call at sunrise that can be used to count the number of coveys on the landscape. These fall covey call counts can be used as a measure of relative abundance for bobwhite quail (scaled quail do not make a covey call). Teams conducted counts by arriving at the mile marker post 40 minutes before official sunrise and listening for calling coveys until 20 mins after the last call was heard. Each mile marker was counted one time. The number of coveys calling at each mile marker was compared across the transect to the habitat evaluation score at that mile marker. Additionally, the average number of calling coveys per mile marker was compared among sites in the study.

Rainfall The total amount of precipitation received during the study period was recorded from a rain gauge located in Henrietta. Quail populations, even on the highest quality habitat, are boom and bust from year to year. Much of that change in population numbers is driven by rainfall, as such it is important to take into account.

Results

Spring Call Counts The statewide average number of bobwhite quail roosters counted per stop was 2.6 with individual county's values ranging from 0 to 12 roosters per stop (Figure 9). The statewide average number of scaled quail counted per stop was 0.1 with values ranging from 0 to 3 roosters per stop. It is important to note that scaled quail call less frequently than bobwhites and therefore the call count index is not comparable across species. However, overall scaled quail were less prevalent than bobwhites across our study sites. The average number of bobwhite roosters per stop on the Clay County site was 4.35 with values ranging from 1.67 to 10 per stop (Figure 10). This puts Clay County in the 79.4 percentile statewide for bobwhites. When judging the response of spring call counts, typically counts from 0-3 are considered poor, 3-6 are considered fair, and 6-9 are considered good. Counts above 9 are excellent, but it is difficult to distinguish individual quail above 9 roosters per stop.

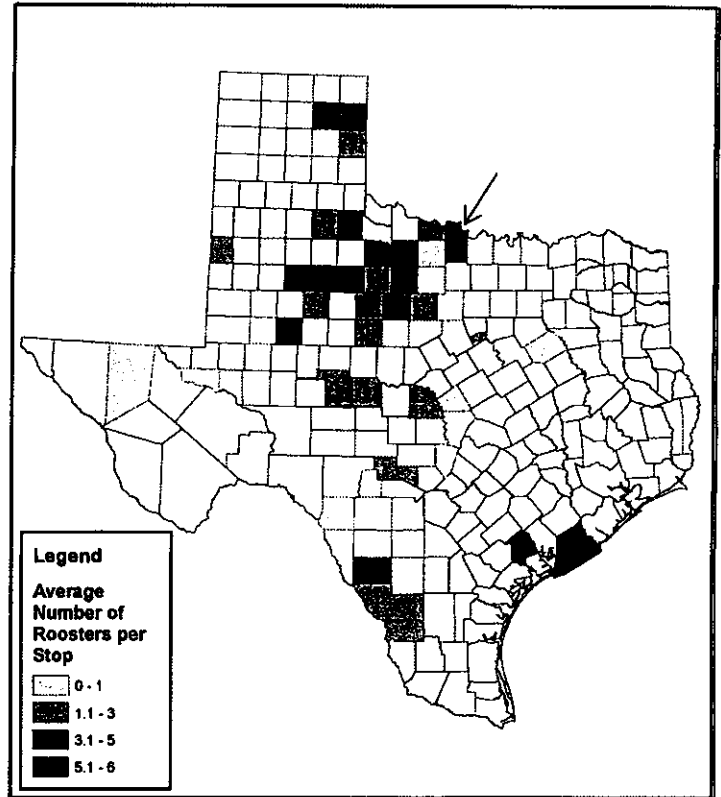


Figure 9. Statewide averages of bobwhite quail counted per stop during spring call counts.

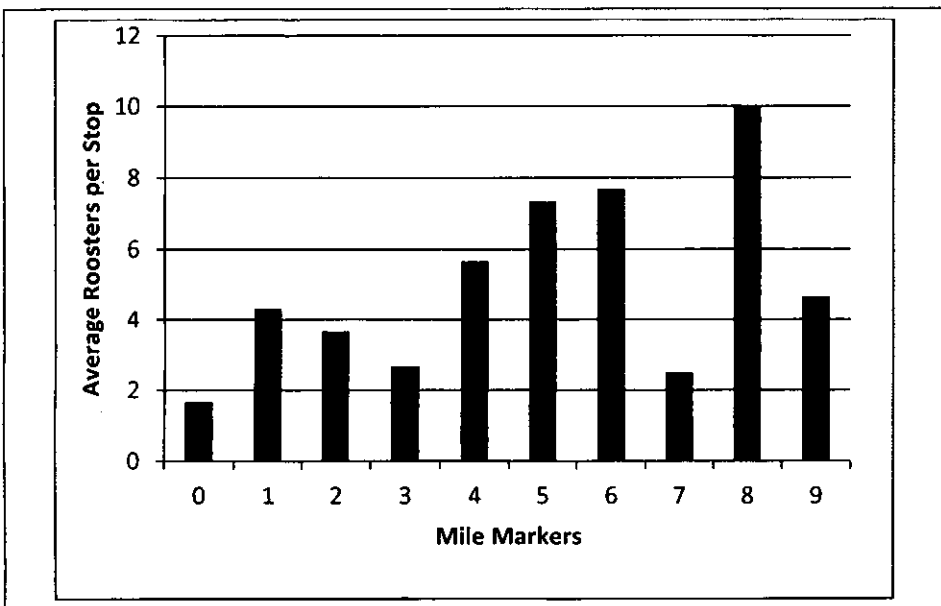


Figure 10. Variation in bobwhite quail roosters counted per mile marker during spring call counts.

Dummy Nests Overall dummy nest survival was 50% statewide; Clay County was below the statewide average at 42 percent dummy nest survival (Table 1). This ranks the site in the 35.2 percentile compared to other participating sites statewide. A good rule of thumb is that dummy nest survival over 40% indicates that the combination of nesting cover and predation pressure is not a limiting factor for success of quail nests at that location. The average number of nesting clumps per acre at the dummy nest locations in Clay County was 518.75. This is above the recommended threshold of 300 suitable nest sites per acre.

Table 1. Dummy nest survival and potential nesting clumps per acre on the Clay county site.

	Dummy Nest "Survival"	Nesting Clumps per Acre
Mile Marker 0	50%	375
Mile Marker 2	67%	237.5
Mile Marker 5	0%	1125
Mile Marker 7	50%	337.5
Overall Average	42%	518.75

Predator Surveys

Four different species of nest predators were identified on the Clay County site (Figures 11, 12, 13). The most commonly identified predators were Feral Hogs.

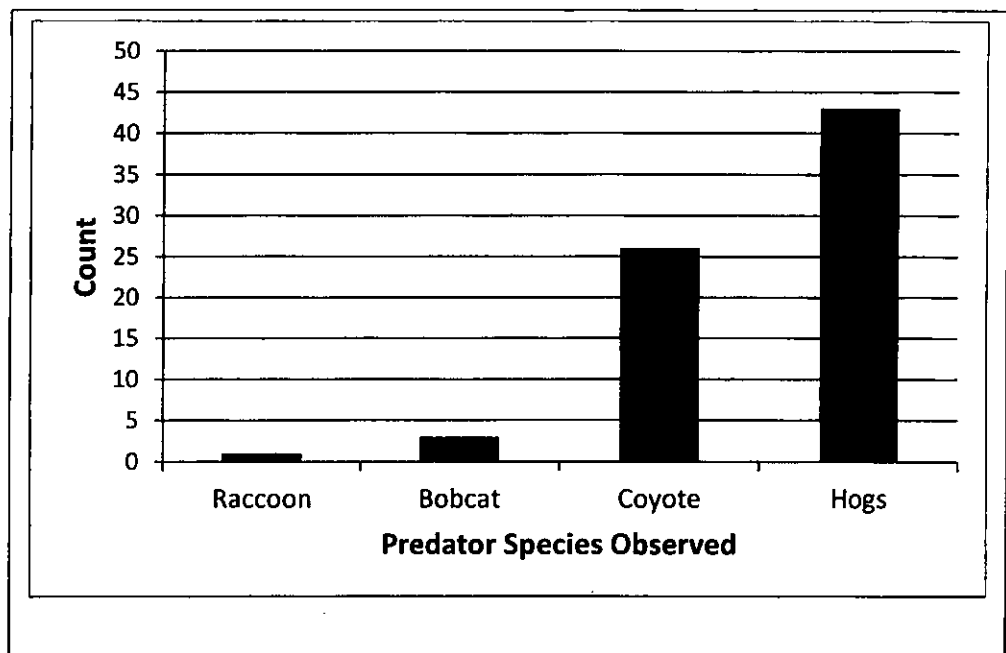


Figure 11. Predator species identified using game cameras.

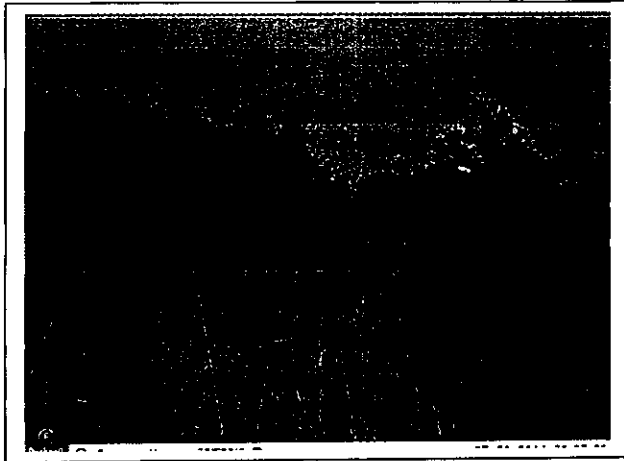


Figure 12. Bobcat captured using game cameras.

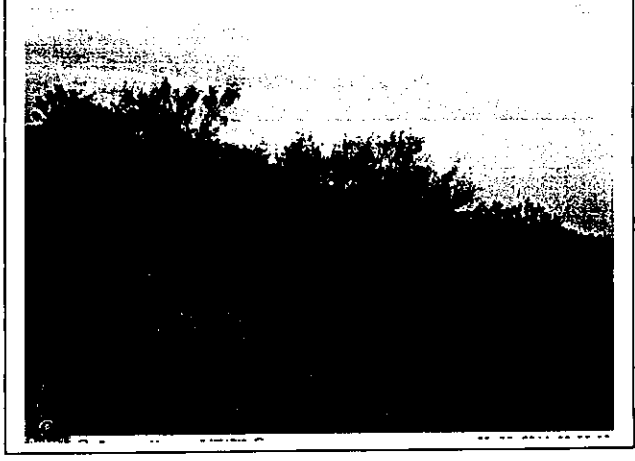


Figure 13. Feral Hog captured using game camera.

Habitat Evaluations Statewide the average habitat evaluation score was 0.67 which equates to a rating of “good” habitat. Habitat evaluation scores from 0.01 – 0.24 describe poor habitat, 0.25-0.49 describe fair habitat, 0.50 – 0.74 describe good habitat, and 0.75 – 1.00 describe excellent habitat. Statewide scores ranged the full distribution from 0 to 1. In Clay County the average habitat score was 0.7 and the range of values was 0.32 to 0.91 (Figure 14).

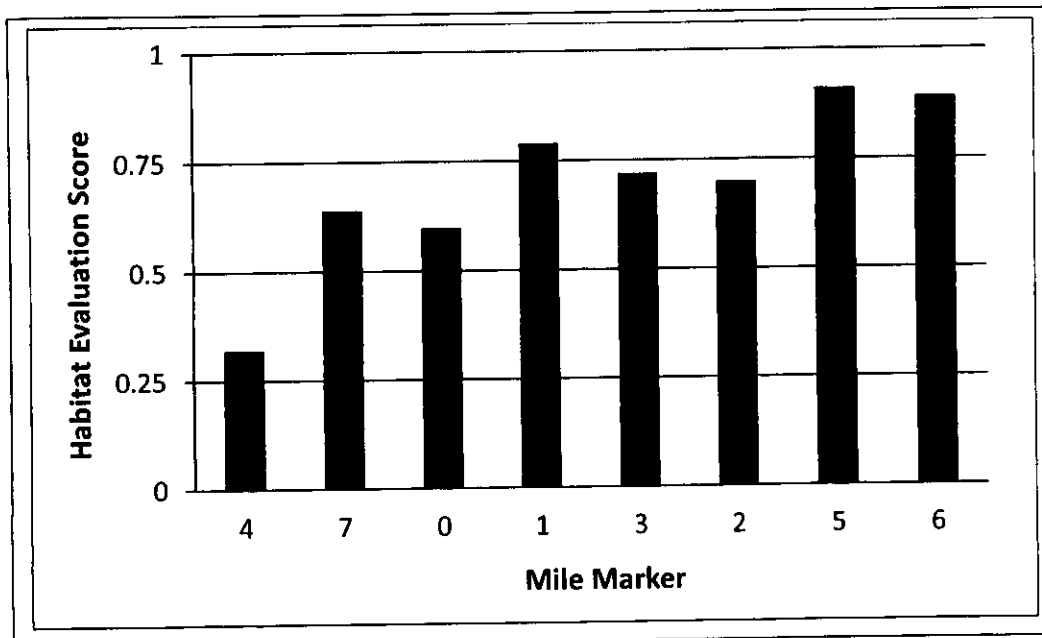


Figure 14. Habitat evaluation score at each mile marker.

In Clay County, the most commonly identified limiting habitat factors were woody diversity and woody cover (Figure 15, 16). This is a method to identify the weak links on a property based on your habitat evaluations. The more points a factor has relative to the factors (i.e. the number of times you have identified it as a limiting factor), the more of a weakness it is on that site.

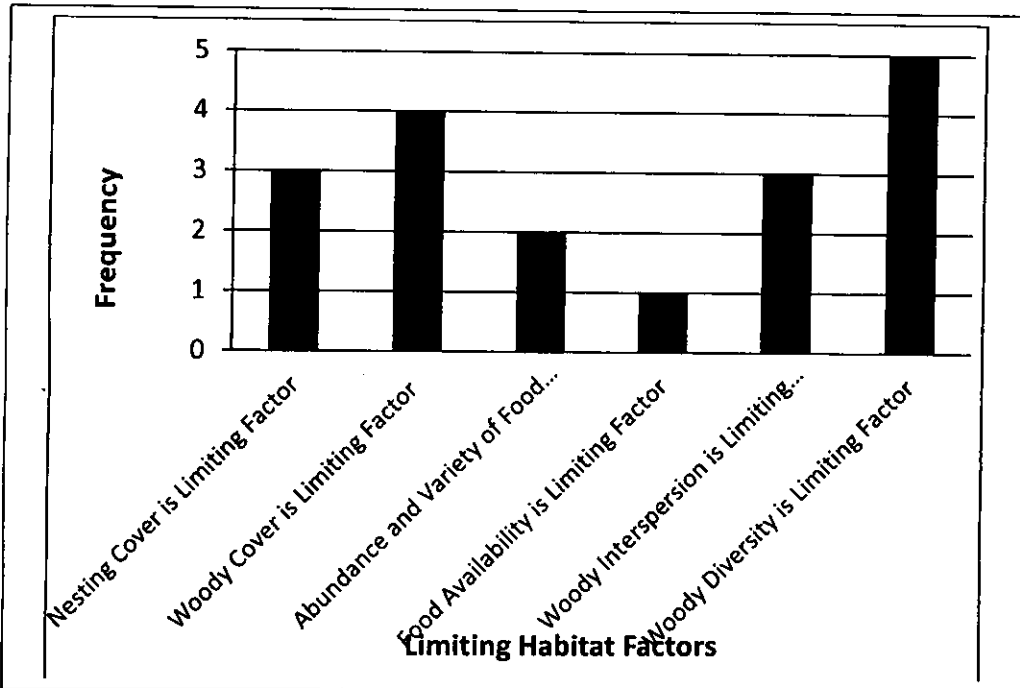
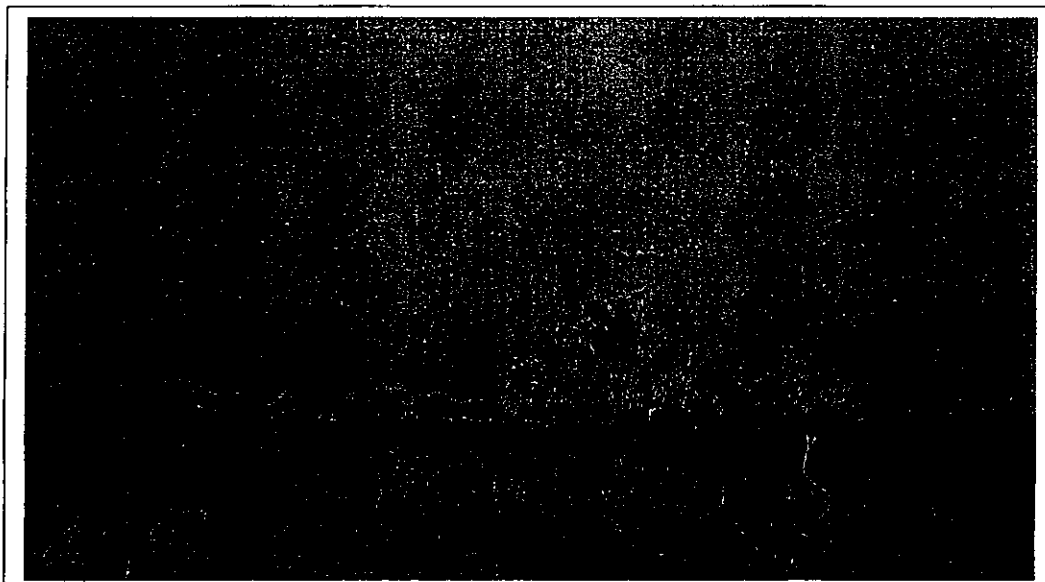


Figure 15. Habitat evaluation score at each mile marker.



Roadside Counts The statewide average roadside count was 2 bobwhite quail per mile. The average count on the Clay County site was 0 quail per mile. This ranks the site in the 0 percentile compared to other participating sites statewide (Figure 17).

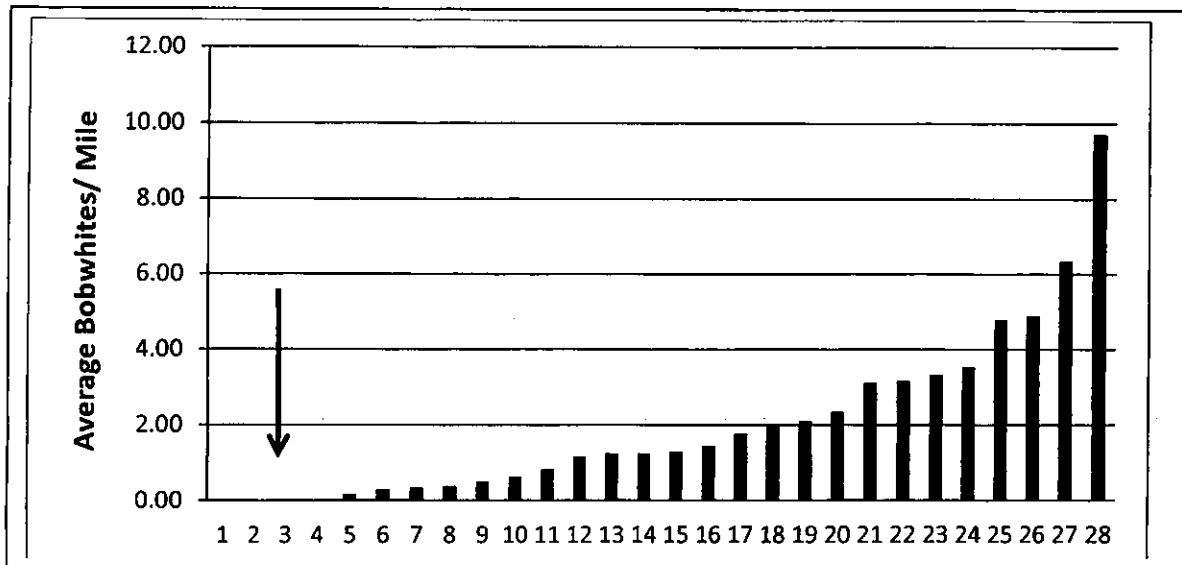


Figure 17. Bobwhite quail observed/mile statewide by county. Clay County ranking denoted by arrow.

Fall Covey Call Counts The statewide average for fall (covey) call counts was 3.2 bobwhite coveys per mile marker. The Clay County site averaged 2.7 bobwhite coveys per mile marker and the number of coveys counted varied by mile marker (Figure 18). This ranks the site in the 54.5th percentile compared to the other participating sites statewide.

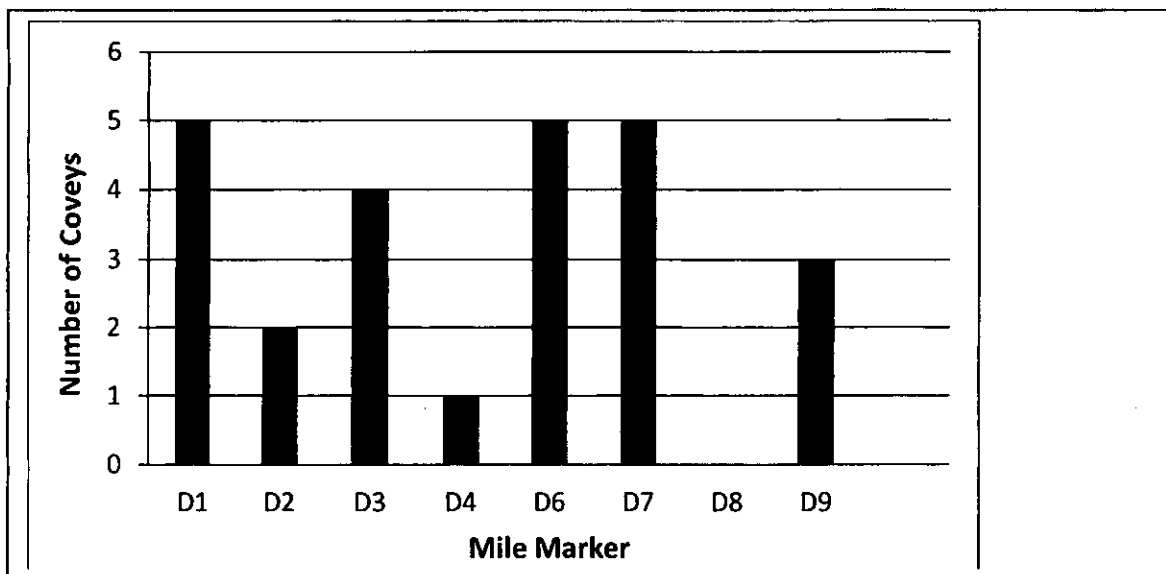


Figure 18. Number of coveys counted per mile marker.

Rainfall The total rainfall for the year as of November 2014 was 23.46 inches. This was 7.19 inches below an average of 30.65 inches. Overall, the Clay County study site is in extreme drought conditions as of 11 November 2014 (Figure 19).

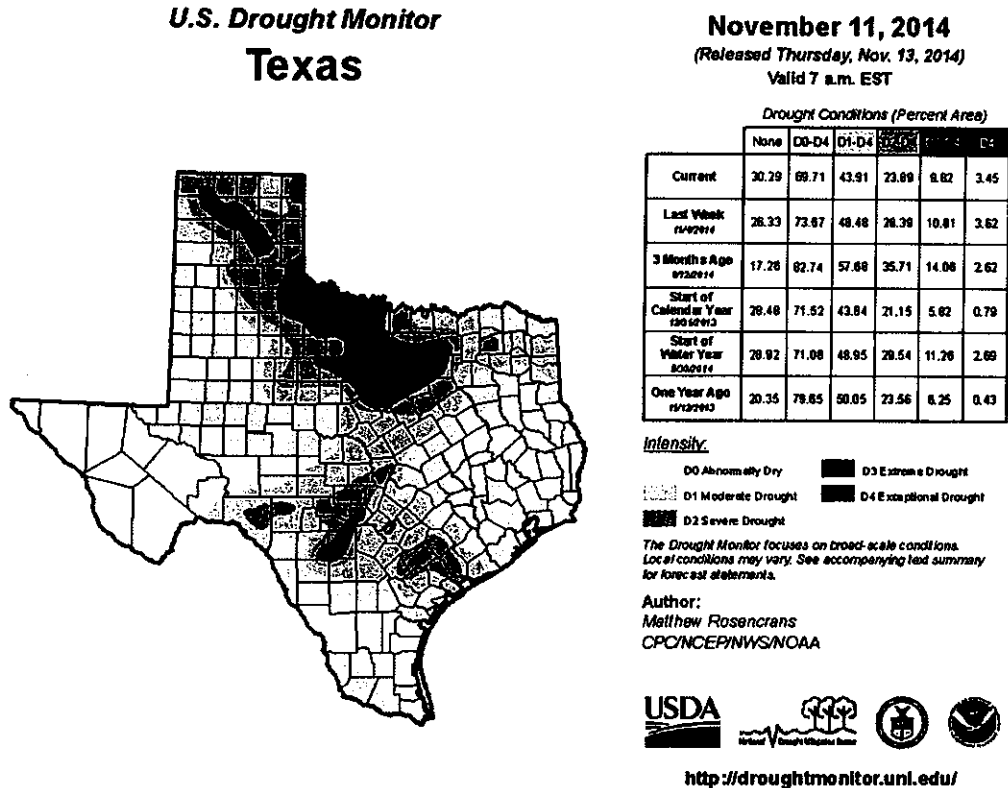


Figure 19. U.S. Drought Monitor results for the state of Texas. Pulled on November 18, 2014.

Discussion and Conclusions

The average number of bobwhite roosters was fair which represents good breeding effort given the ongoing drought.

Available nesting sites are there as Clay County exceeded the statewide level nesting clumps per acre. However, the Clay County site was slightly lower on dummy nest success rate. The limiting factor identified by the habitat evaluations is woody diversity so promotion of the growth of a more diverse woody plant species could benefit quail by providing more cover from predators. In most locations surveyed mesquite was the woody cover most available to quail. Although mesquite can be used as escape cover depending on the individual plant, it is often not ideal to provide good protection from hawks. In addition, Mile Marker 5 was fairly close to a river which we feel increased the predator pressure which attributed to the zero percent nest success at this site. Feral hogs are a nest predator of quail and were numerous on this site; therefore, control of feral hogs may also be warranted here.

Many of the techniques employed during the Texas Quail Index are best used to evaluate a single property over time. This means collecting the same data from the same locations year after year for comparison. The conclusions we can draw using just one year's data are limited; however, it is our hope that the landowners and managers can see the value in collecting these types of data to monitor their quail populations and evaluate their management activities for the benefit of quail populations on their property.

The forecast for winter 2014 through spring 2015 calls for El Nino conditions and above average rainfall. If this holds out the quail population could be poised for a healthy rebound for hunting season 2015 following this year's reproductive effort.

Acknowledgments

Special thanks to landowner, Brent Durham for his cooperation on this project.

Trade names of commercial products used in this report is included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by Texas AgriLife Extension Service and the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Making a Difference

Clay County Back to Basics Youth Swine Outcome - 2014

Summary developed by Missy Hodgin, Ag/NR Agent

Relevance There have been six major benefits identified as a result of exhibiting livestock, which include: social relations, character, family, competition, learning new cultures and environments, and helping finance the youth's higher education. In Clay County, there is a need for the education of more inexperienced exhibitors. Hopefully, these exhibitors will gain not only knowledge of their project but also gain valuable leadership experience as they help others with their projects.

The Back to Basics Youth Livestock Program was implemented to provide a road map to accomplish the following:

- 1) Provide local educational experiences to youth and adults
- 2) Identify, train, utilize and engage volunteers
- 3) Introduce livestock youth to activities related to their project (i.e. skillathons, quiz bowls, judging, etc.)
- 4) Build ownership and loyalty in the program
- 5) Establish a youth livestock task force to give direction to the program

Response Texas AgriLife Extension Service in Clay County worked with the Clay County 4-H Livestock Task Force and 4-H project leaders to develop the following educational programs to educate youth in order that they become more knowledgeable of their swine projects and swine production. The following programs were implemented to address these issues:

- **Project Selection**, agent assisted 4-H members and their families on a one-on-one basis with selecting projects to fit their needs.
- **Livestock Show Entries**, 4-H youth exhibited livestock at the county show (15 4-H youth entered county show) and at Fort Worth Livestock Show (3 4-H major show entries)
- **Project Visits**, agent checks livestock projects as needed and offers assistance in feeding, facilities, showmanship, health and show preparation. (January – December – 58 visits)
- **Swine Selection Project Meeting**, hosted a clinic that focused on selection and opportunities within the swine project. Quality Counts lessons were incorporated. (October – 7 attended)
- **Facilities Project Meeting**, hosted a swine clinic that focused on facilities needed for a swine project for 4-Hers. Quality Counts lessons were incorporated. (October – 5 attended)
- **Swine Validation**, agent assisted with swine validation for both county and major livestock shows. Validation was planned and implemented by the county hog validation committee. (November - 26 attended)
- **Feeding and Nutrition Project Meeting**, hosted a clinic that focused on feeding, nutrition and exercise of a hog project. Quality Counts lessons were incorporated. (November – 18 attended)
- **Health Management Project Meeting**, hosted a clinic that focused on health management. Quality Counts lessons were incorporated. (November – 15 attended)
- **Grooming and Show Preparation Project Meeting**, hosted a clinic that focused on grooming of the hog project as well as show preparation. 4-H members practiced showing their pigs. Quality Counts lessons were incorporated. (December - 19 attended)

Educational programs of the Texas A&M AgriLife Extension Service are open to all people without regard to race, color, sex, religion, national origin, age, disability, genetic information, or veteran status. The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating

Results A post-test evaluation instrument was utilized to measure programmatic impact from these programs. A total of 7 of 14 returned the instrument at a response rate of 50%. The respondents were 57% female and 43% male. 57% lived on a farm or ranch and 43% lived in a town less than 10,000. The results are as follows:

Behavior Change	Yes	No	Unsure
Looking for health problems in project.	85.7	14.3	0.0
Cleaning livestock facilities daily.	42.9	57.1	0.0
Feed my project following the feed tag directions.	57.1	42.9	0.0
Have an adult help in following proper medication label directions.	100.0	0.0	0.0
Record keeping so that I can ensure I am doing my daily chores correctly.	28.6	71.4	0.0
Develop my own HACCP plan for my project.	28.6	71.4	0.0
Respect others in the show ring.	100.0	0.0	0.0
Listen to others when they are speaking to me.	85.7	14.3	0.0
Follow all the rules.	100.0	0.0	0.0
Help other youth with their projects.	100.0	0.0	0.0
Set personal goals for me and my project.	57.1	28.6	14.3

What is the most important thing you have learned from the Livestock Program?

- "Taking care of pigs is hard work."
- "I learned a great deal from my pig project."
- "You have to work hard to do well at the show."
- "Responsibility."

Do you feel like what you learned provides you the ability to make better leadership decisions?

- Yes 80.0%
 - "I learned to be more assertive."
 - "I had to make my own decisions."
 - "I learned to respect my pigs and to take care of them."
- No 20.0%
 - ❖ I believe as the youth age, their leadership experiences will increase.

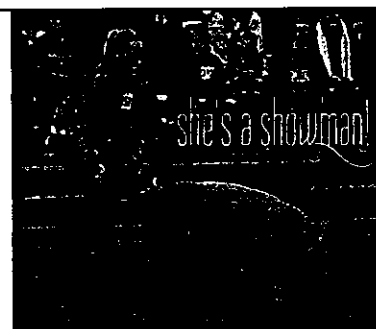
Summary Results indicate that the Clay Back to Basics Swine program met its objectives of educating youth and their families about swine projects and swine production. Hopefully this increase in knowledge will foster growth in this project area.

Acknowledgements Special thanks are extended to Clay County 4-H Volunteers that serve as project leaders.



A 4-H member exhibits her pig at the county livestock show.

These 4-H members proudly display the awards their hard work earned them.



This brother and sister demonstrate another benefit of the livestock program...family bonding.

EXTENDING KNOWLEDGE
Providing Solutions

Making a Difference

Clay County Youth Ag Literacy Program

Developed by Missy Hodgin, County Extension Agent – Agriculture & Natural Resources – Clay County

Relevance. As today's youth are further removed from farming and ranching, they do not understand the importance of agriculture and how it impacts their daily lives. With approximately 1,600 youth in Clay County between the ages of five to eighteen, it is important to educate them on how agriculture affects their day-to-day living, especially in a county where agricultural production accounts for about ninety percent of total gross income. This is a trend-based program and was strongly advocated by county committees including Leadership Advisory Board, 4-H and Youth Development Committee and the Clay County Farm Bureau board of directors. This agriculture literacy program was targeted towards fourth graders from Henrietta, Petrolia, Bellevue and Midway Independent School Districts as well as Fowler Elementary, a Wichita Falls school, and provides the following educational components: an ag in the classroom field day and a poster contest.

Response. Texas A&M AgriLife Extension Service in Clay County developed the following events and activities to address this relevant issue:

- Ag in the Classroom Field Day (October, 2014) which included the following stations:
 - Farm Bureau's Mobile Learning Barn
 - Rainfall Simulator
 - Farm Equipment
 - Cotton Gin
 - Native Range
 - Wildlife
 - Horse
 - Livestock
 - Mobile Dairy
- Poster Contest (November 2014)
 - Students drew and/or wrote a story about what they learned at the Ag Day
 - Clay County Farm Bureau Board of Directors present each class winner with a gift certificate
 - Posters are shared with volunteers, school faculty and administration, the Clay County Farm Bureau Board of Directors and other key stakeholders.

Volunteers, which include local 4-H members, serve as presenters at each station. Petrolia FFA members serve as group leaders. The Clay County Farm Bureau board of directors prepares and serves lunch. The event is hosted at Henderson Farms, a working farm in Byers, Texas. Tommy Henderson serves on the local Farm Bureau board.

This has been a collaborative effort with the 4-H and Youth Program Development Committee, Leadership Advisory Board, the Clay Beef Committee, and the Clay County Farm Bureau Board of Directors.

Results. Programmatic impact was determined through the testimony of the students through the posters they completed following Ag Day.

Below is a sample of the quotes from the poster contest:

- ❖ "Farming is extremely important to the whole world. Because we transport most of our food to cities, states and even countries. That is how we get it to our stores." Kayla
- ❖ "I met Bell and learned cows have four stomachs. I also learned how to milk a cow and find it interesting because I love to drink milk so much!" Brandon

- ❖ "I learned that wheat is used in most food like bread and noodles and many other things." Jade
- ❖ "I learned that if we have no farms we wouldn't have food or clothes. We need corn, wheat and milk to make food. We need cotton to have clothes." Ashley
- ❖ "I learned about tractors, water conservation and grass. Grass is a great part of water conservation. The grass planted on the fields takes up the rain water and when it does it filters it." Caitlin
- ❖ "I learned that cotton can be used in many different ways. You can make all sorts of clothes, like jeans, shirts, shoes, skirts and more. Cotton has a million uses and I think it is very fascinating." Emma
- ❖ "Tractors are for planting things. A tractor is a good tool to people who farm. Tractors can pull plows and planters." Kenzli
- ❖ "I learned that cows can be milked by a machine now instead of by hand." Harley

Texas A&M AgriLife Extension
"Science of Agriculture"
programs teach youth about the
role agriculture plays in the
world and in their lives.

* The teachers involved and school faculty are very supportive of this event. Some have told us that their students begin asking "when they will get to go to the farm" as soon as school starts. The 4-H and FFA members that serve as group leaders and presenters also look forward to the event.

Results indicate that the Clay County Ag Literacy Program met its goals of increasing agriculture awareness in youth audiences and educating youth in how agriculture affects their daily lives.

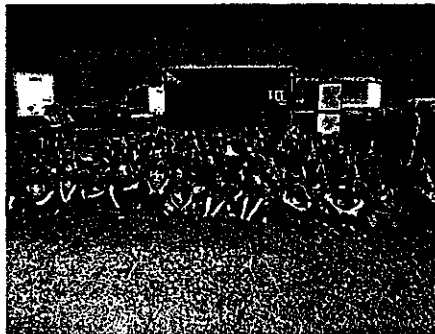
Acknowledgements

Special thanks to the following experts for presenting at these activities: USDA-NRCS – Cordelia Redman, Kenny Prewitt, Tyler Garrison and Dorothy Kucharski; Texas Parks & Wildlife – Charlie Newberry; Local Farmers/Ranchers –Tommy Henderson and Charlie Henderson and families and Ross Cantrell; Clay County 4-H members, Conner Chambers, Hagen Houck and Josey Cleveland; Henrietta FFA member, Mikayla Graham; Petrolia FFA members led by AST's Josh Cox and Johnny Simmons; Texas Farm Bureau – Trey Berend and Bryce Moore. Also, thank you to the Clay County Farm Bureau Board of Directors for sponsoring the event and preparing the meal. Additional thanks are due to the Clay County Independent School Districts for their cooperation and assistance in implementing this program.

As we continue to educate youth in Clay County about the importance of agriculture, this data will help guide future programmatic efforts. These results will be shared with the Clay Beef Committee, Clay County Farm Bureau Board of Directors, civic groups, the Commissioners Court and other key stakeholders.



Charlie Newberry, Texas Parks and Wildlife, shows students animal skulls found in Clay County.



Clay County 4th graders sit in front of the Mobile Dairy and "Bell."



Bryce Moore, Texas Farm Bureau, talks about everything we use day to day that is made from cotton.