8th Annual Field Day

Abstracts

Friday, Sept. 25, 2015

Reaping the Benefits of a Jubilee Year

In cooperation with

Texas A&M AgriLife Extension

RPQRR's Vision: To sustain Texas' wild quail hunting heritage for this, and future, generations.

Mission statement: To provide land managers, and other stakeholders, with timely, relevant technology and management schemes for enhancing quail populations in the Rolling Plains of Texas.

Welcome Students of Quail!

Becky Ruzicka

We're glad you joined us for our 8th annual field day at the Rolling Plains Quail Research Ranch. This year's theme is "***Reaping the Benefits of a Jubilee Year***." For the first time since 2008 prospects are high for a (some would say miraculously) good quail hunting season. Hopefully you'll glean some ideas for how to improve your rangeland as quail habitat and increase your personal knowledge of quail and quail management.

This year's field day is dedicated to Ms. Becky Ruzicka. Becky showed up here at RPQRR in February 2011 as a volunteer. She quickly earned the respect of all of us, and when funds became available for the Operation Idiopathic Decline project (a logistical behemoth), I hired Beck to coordinate field sampling (35 counties). She is a "can do" lady in every respect, and rode herd over the OID effort in fine fashion. Becky is a rare individual—she's adept at today's analytical tools (e.g., modelling, statistical analyses) yet she is at home in the field. Since the OID project Becky has been my colleague with Agrilife Extension to put legs under the *Reversing the Decline of Quail Initiative*. What that meant for Becky for the past two years has included "miles and miles of Texas", coordinating the Texas Quail Index across 38 counties, and in general making me (as Statewide Coordinator) look good. And I appreciate that! Last week's Statewide Quail Symposium was a smashing success, thanks in large part to Becky's planning, innovation, and dogged determination. We hope to launch Becky on her odyssey for a Ph.D. at Colorado State University next Spring analyzing our "Blue Quail Transfusion" research (which we seek to expand in 2016)

The weather has surely been better this year than the previous four—a jubilee year for sure! We enjoyed perfect "quail-making" weather (cool, wet) during mid-May through June, but July and August proved a reality check. Promise of a developing El Nino for this fall surely has a drooling for what next year's quail crop *may* be! A. S. Jackson might say we're seeing a "vertical increase" this year.

We always value your feedback, formally (via the evaluation for today's tour), or informally, so please share your ideas with me or one of the RPQRR staff. Enjoy your day, make some new friends, enhance your plant ID skills, and make progress towards becoming a better "Student of Quail." If you're not a "friend" on our Facebook page or subscriber to our *e-Quail Newsletter*, I encourage you to sign up for both (see www.quailresearch.org) for details.

We thank our sponsors for today's event and indeed for providing operating costs for RPQRR. If you, or your friends, can be of assistance in our fundraising efforts, please contact me for additional details.

Dale Rollins

Executive Director

2015 Field Day Agenda

8:30 Registration & refreshments
CEU paperwork (J. McGriff)
Test your knowledge of key plants for quail (R. Linex)

9:00 Welcome and Introductory Comments
2015 Weather Year in Review— L. Lacoste

9:20 **Stop 1 – South Food Plot**
Food plots for bugs and bobwhites—L. LaCoste
Rats and raptors—A. Cain
Establishing woody cover on fields—D. Rollins
Ragweed seed dynamics—M. Dake
Shooting field management for doves –D. Rollins

10:15 **Stop 2 – South Annie CRP**
CRP & Quail
Sculpting mesquite regrowth— D. Rollins
Arthropod availability — A. Cain & A. Bleich
Enhancing quail use of CRP —L. LaCoste
Quail counts & demographics—L. LaCoste
Nesting effort—B. Kubecka

11:00 **Stop 3 - Oscar pasture**
Operation Blue Transfusion—D. Rollins & K. Campbell
Quail Translocations off-site —B. Kubecka
Quail Habitat Evaluation— B. Ruzicka
Camera-trapping to monitor mesocarnivore abundance — M. Dake
Do quail feeders predispose quail to predation? — J. Davis

12:00 **Stop 4 - LUNCH at Pavilion — Acknowledge Sponsors**

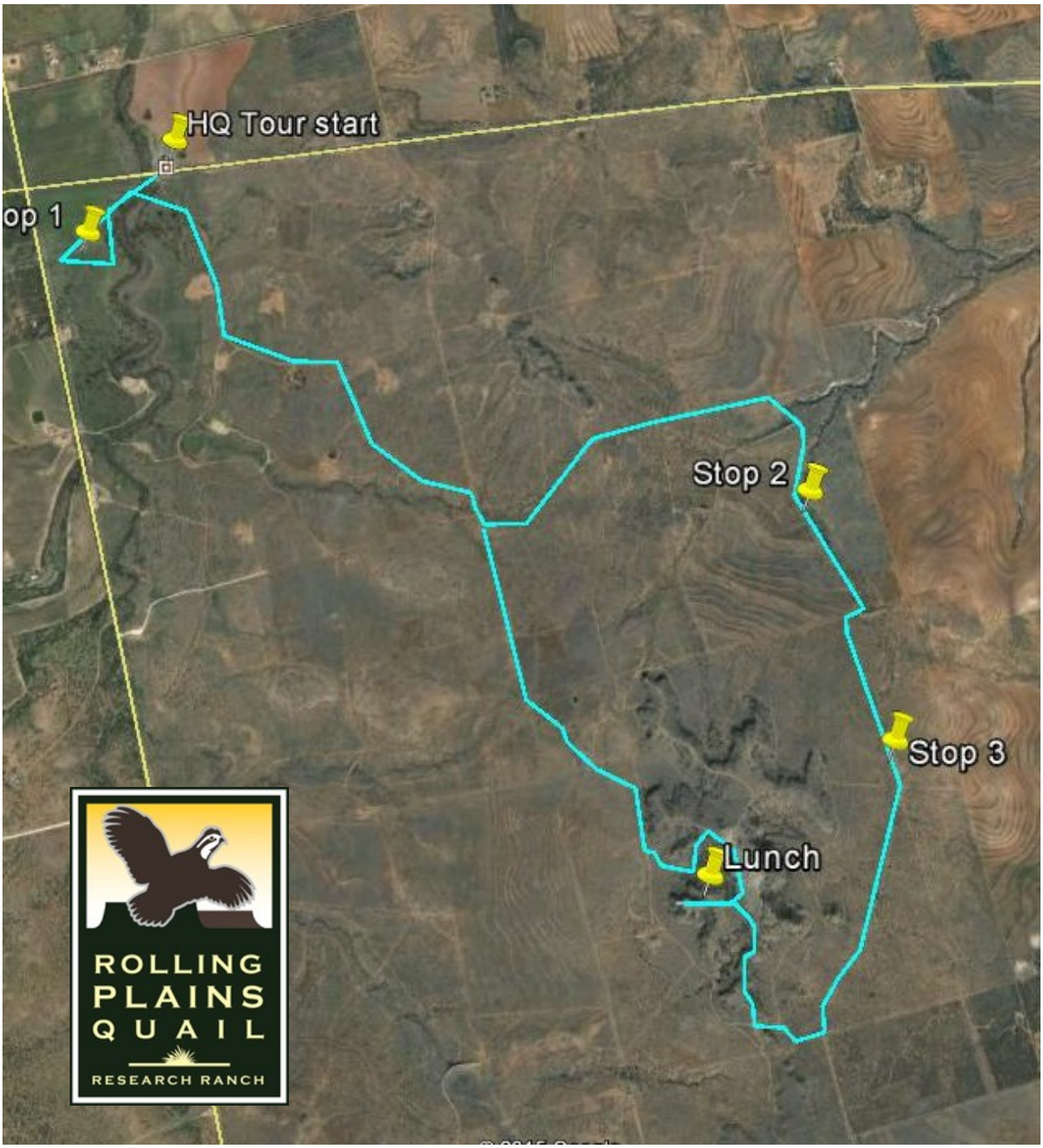
12:45 **Research Updates**
Update on eyeworm control efforts— D. Rollins
Update from Texas A&M Agrilife's Reversing the Decline of Quail initiative — B. Ruzicka
Update on Rolling Plains Prescribed Burn Association— M. Tynes
Testimonials from QuailMasters and Bobwhite Brigade— B. Mullen
Complete evaluation

2:00 Depart for HQ

2:30 Results of Plant ID contest — R. Linex
CEU certificates — Justin McGriff

3:00 Adjourn

Field Day Route - 2015

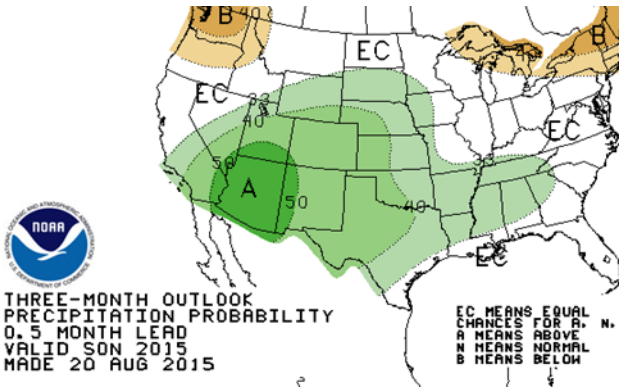


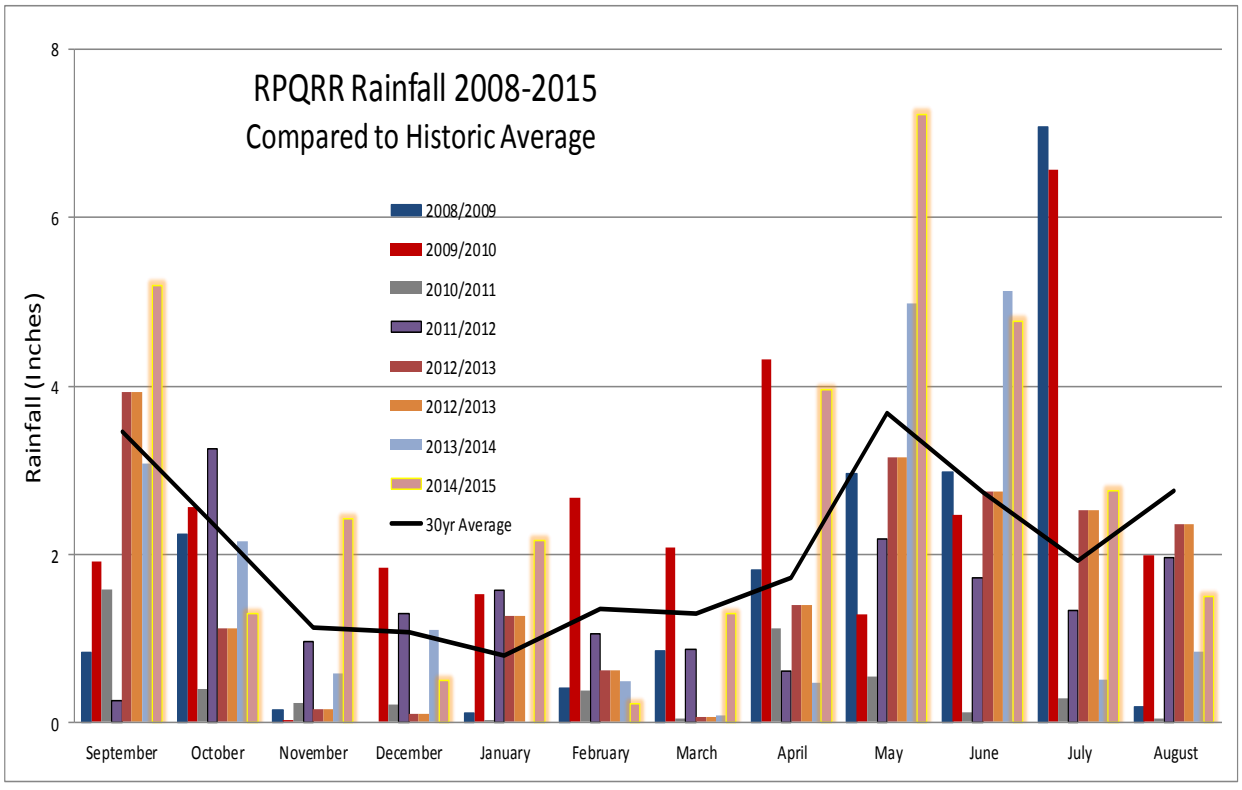
2015 Weather- The Year in Review

Lloyd LaCoste, RPQRR

Weather plays an important role in quail survival and a crucial role in quail reproduction. A cooler than normal spring and summer with plenty of rainfall usually will enhance quail reproduction. This summer was cooler than any other since RQPRR began operations. There were only 8 days where the temperatures exceeded 100 degrees Fahrenheit. To compare this to other years 2011, 2012, 2013, and 2014 had 79, 38, 13, and 11 days respectively that topped 100 degrees. April —August rainfall in 2015 was an incredible 20.23 inches. The 30-year annual average rainfall for this area is 24.22 inches per year. From September 2014—August 2015 RPQRR received 33.34 inches. There were no significant hail events during this time period.

Hopefully the "El Nino" conditions that are predicted will take control of our weather patterns and produce some much needed months of above average rainfall, and the opportunity for our quail at RPQRR to continue their rebound.

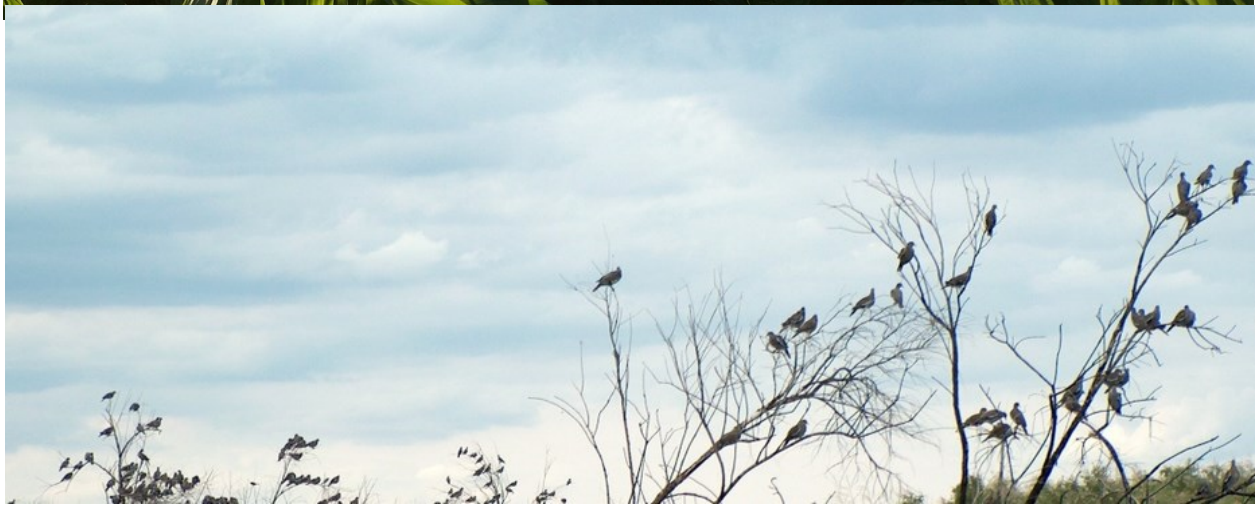




STOP 1

South Food Plot

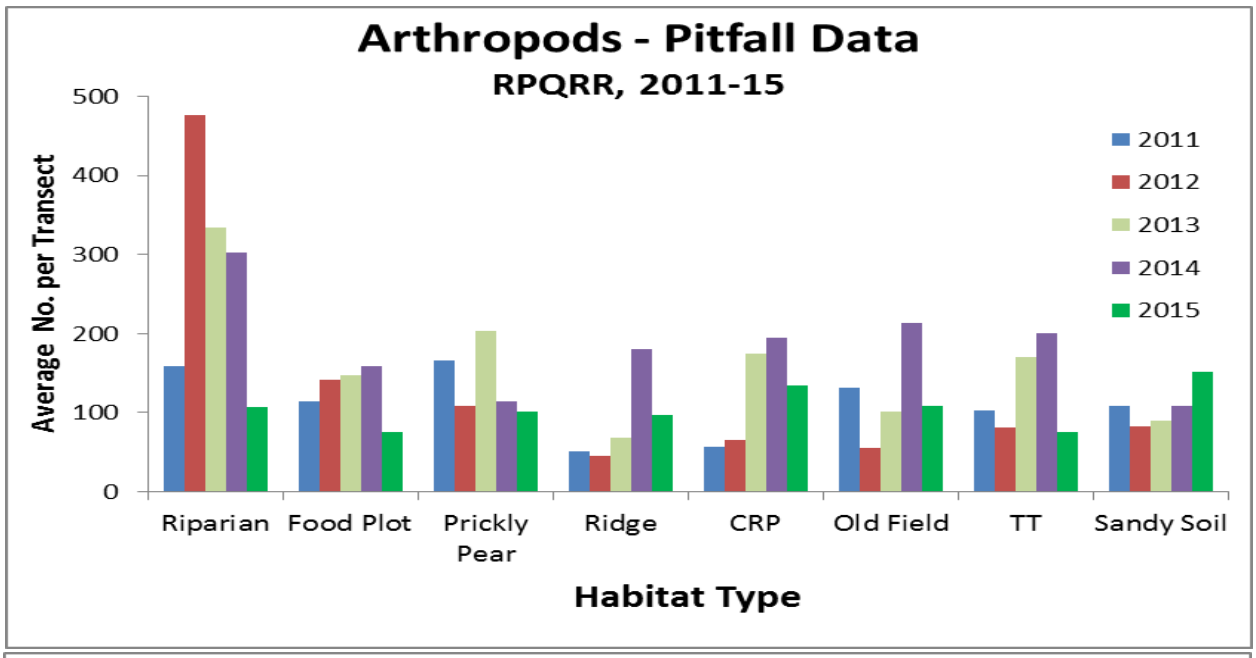
Food plots for bugs and bobwhites
Rats and raptors
Establishing woody cover
Ragweed seed dynamics
Shooting field management for doves

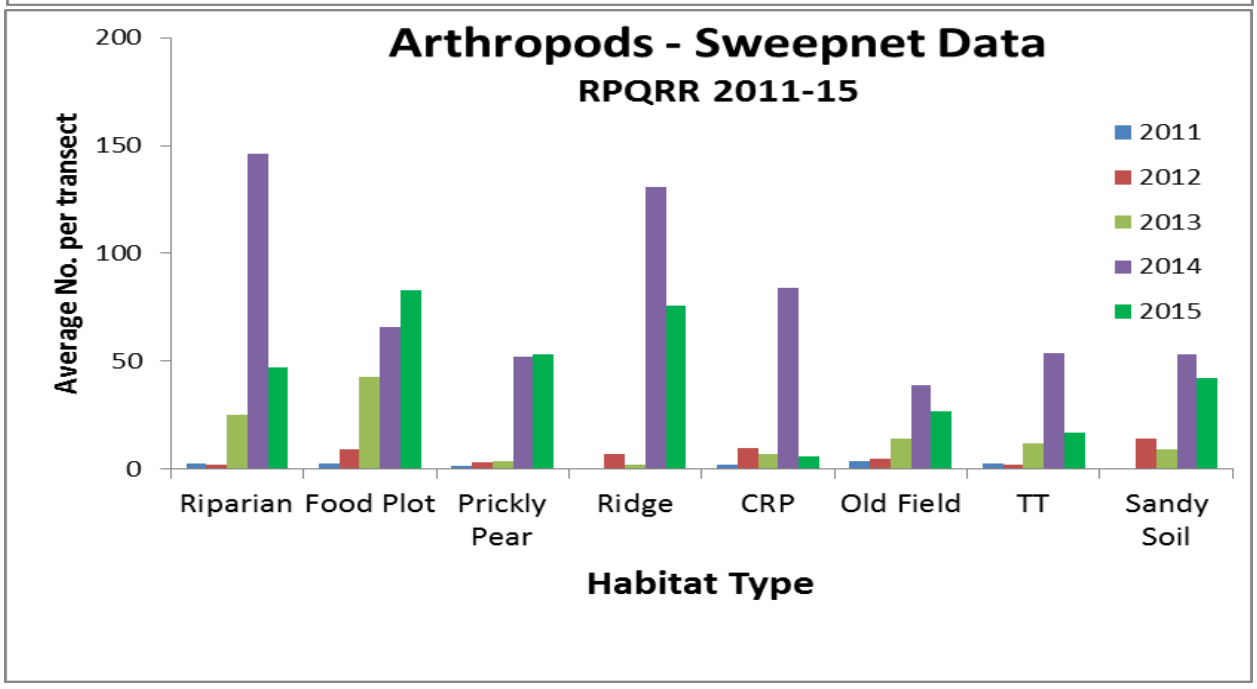


Arthropod dynamics

Adrian Cain, RPQRR

Arthropods (e.g., insects) are one of many food resources for quail. At RPQRR we conduct an arthropod surveys annually in July to estimate the overall abundance of arthropods. Our survey takes place across 8 different habitat types over the entire ranch. When conducting the survey we used 2 sampling techniques: pitfalls and sweep nets. Pitfall traps were checked at 3-day increments with a total of 3 checks for the survey. After pitfalls are completed, sweep nets are implemented at 4 randomly selected pitfalls. In performing sweep nets, we start at the pitfall and sweep the nets back and forth fifty times along a heading perpendicular to the pitfall transect. All arthropods are dried, counted and recorded.

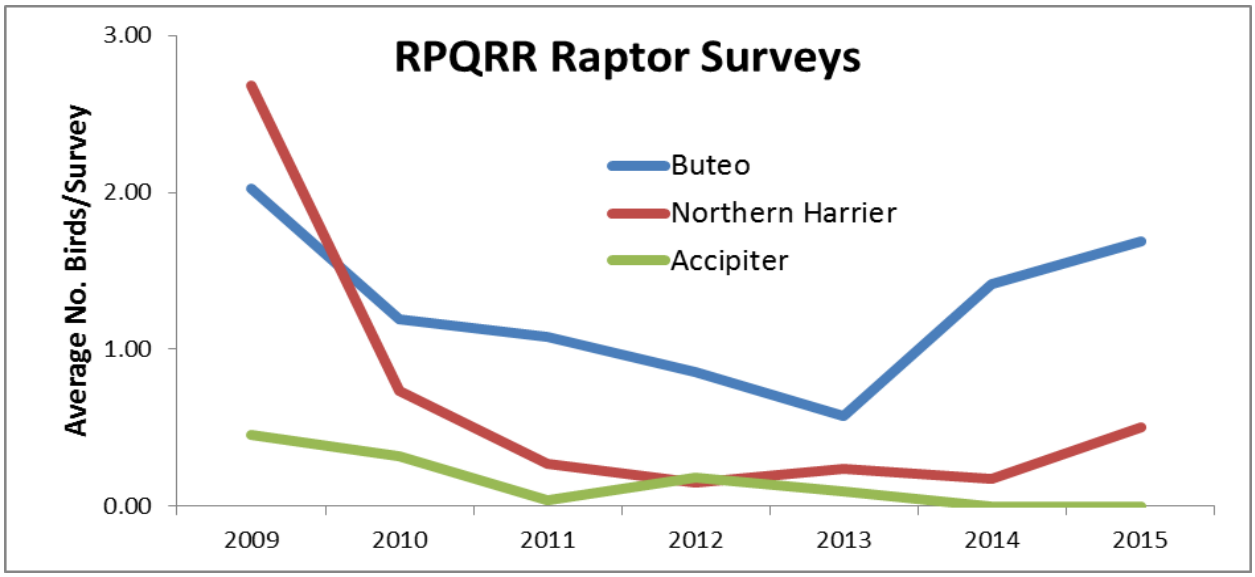




Raptor Surveys

Adrian Cain, RPQRR

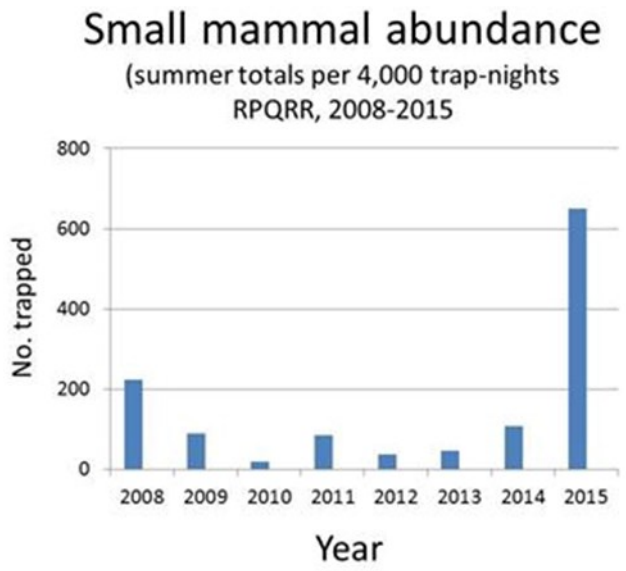
Raptors are important predators of quail. We conduct weekly surveys along two 10-mile routes at RPQRR to record each raptor's location, species, and activity (perching and soaring). The chart shows the total number of raptors from January 1 through December 31 for each year. There has been an increase of raptor observations thus far in 2015 compared to the last few years. This could indicate that increasing prey abundance (quail and small mammals) has attracted more raptors into the area in search of prey.

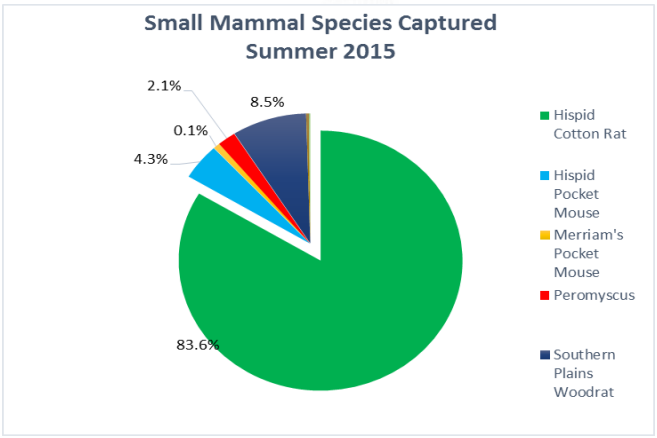


Small Mammal Trends on RPQRR

Christine Palmer, Summer Intern, RPQRR

Research on small mammals is conducted at RPQRR because they may act as a buffer for quail predation. Predators of quail (and their nests) such as bobcats and coyotes, also prey on various species of small mammals. Trends in small mammal dynamics at Tall Timbers Research Station in Florida have documented strong positive relationships with bobwhite abundance. Each year we set up 25 Sherman traps in 5 X 5 grids, with 5 grids per habitat type (Old Field, Food Plot, Mesquite Woodland, Rocky Outcrops, Prickly Pear, Sandy Soil, Riparian, and CRP fields), for a total of 4 nights. Therefore at the end of each trap season we have collected data for a total of 4000 trap nights (8 habitat types X 500 trap-nights per type). This summer, there was an explosion in the number of small mammals captured as compared to previous years (2008-2014). The number of new individuals, i.e., not including recaptures, was more than 3X as any other summer trap season since we started trapping in 2008. Our data show we observed a boom especially with the Hispid Cotton Rat (*Sigmodon hispidus*) which comprised 83.6% of our new captures throughout the 8 different habitat types. Overall, we captured 7 different species and a total of 623 new-captured individuals for the 2015 summer season.

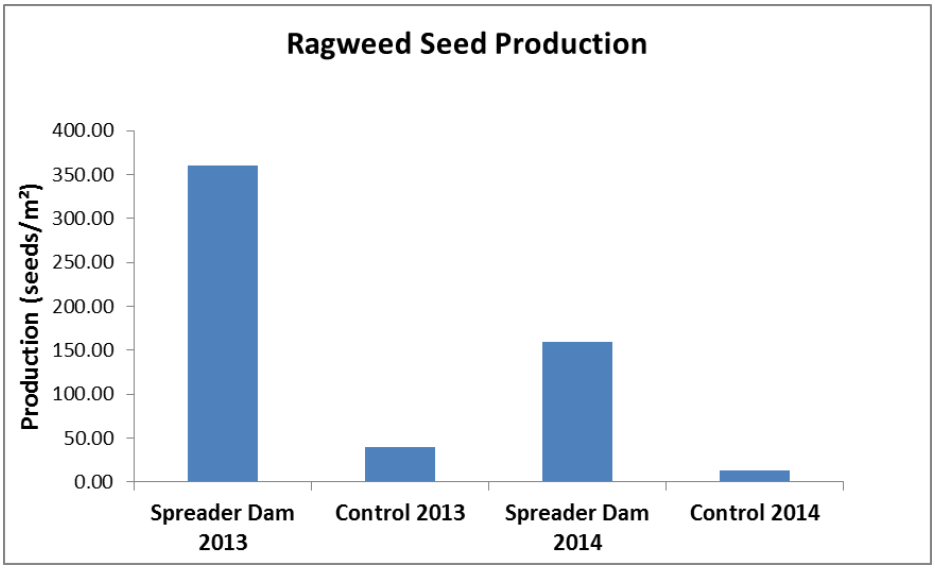




Western Ragweed Seed Dynamics—Impacts of Spreader Dams

Lloyd LaCoste and Michael Dake, RPQRR

Seeds of western ragweed (*Ambrosia cumanensis*) are a major component of the winter diet of bobwhite quail. We measured seed production of western ragweed at RPQRR to determine if out spreader dams would stimulate ragweed production. We measured density of ragweeds and counted seed production on 60 plants inside and 60 plants outside of the influence of the spreader dams. Seed production was similar between the two sites. Western ragweed plants located in spreader dams produced 23.6 and 16.7 seeds per plant in 2013 and 2014 respectively, while there were 22.6 and 21.93 seeds per plant in 2013 and 2014 respectively within the control sites. The main difference between sites was the density of ragweed between the spreader dams and the upland control areas. Spreader dams produced 15.3 and 9.53 ragweed plants per square meter in 2013 and 2014 respectively, whereas the adjacent upland control areas only produced 1.8 and 0.6 ragweed plants per square meter in 2013 and 2014 respectively. When looking at seed production per square meter, spreader dam sites produced 9 times more seeds per square meter than the upland control areas in 2013, while in 2014 the spreader dam sites produced 12 times more seeds than the upland control areas per square meter.



STOP 2

Enhancing CRP pasture for quail habitat
Assessing quail response at RPQRR

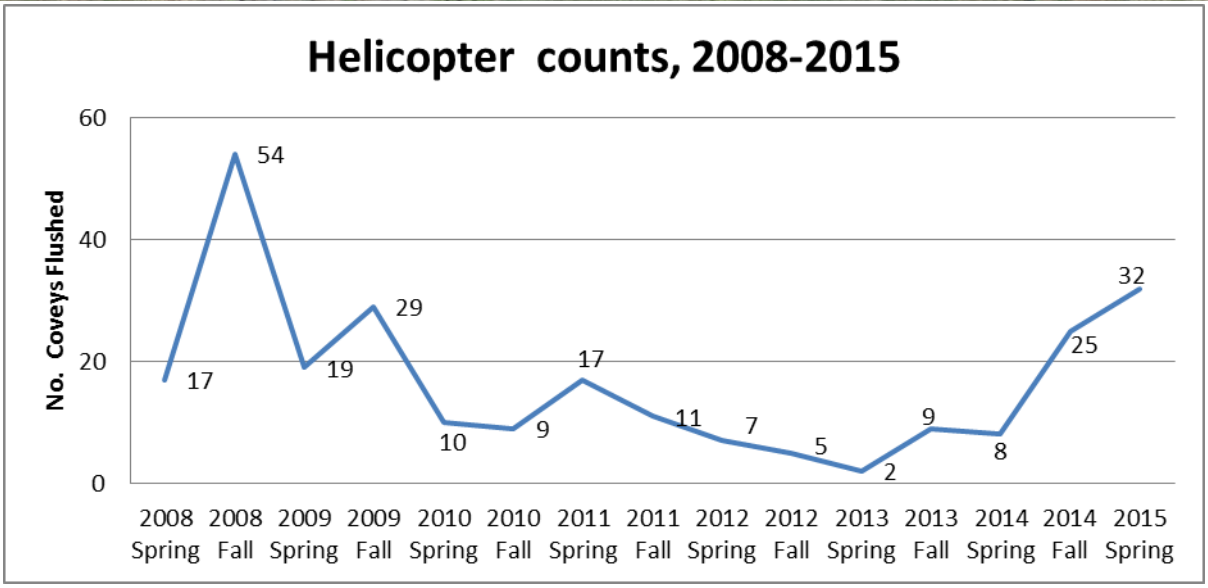
Monitoring Quail Abundance at RPQRR

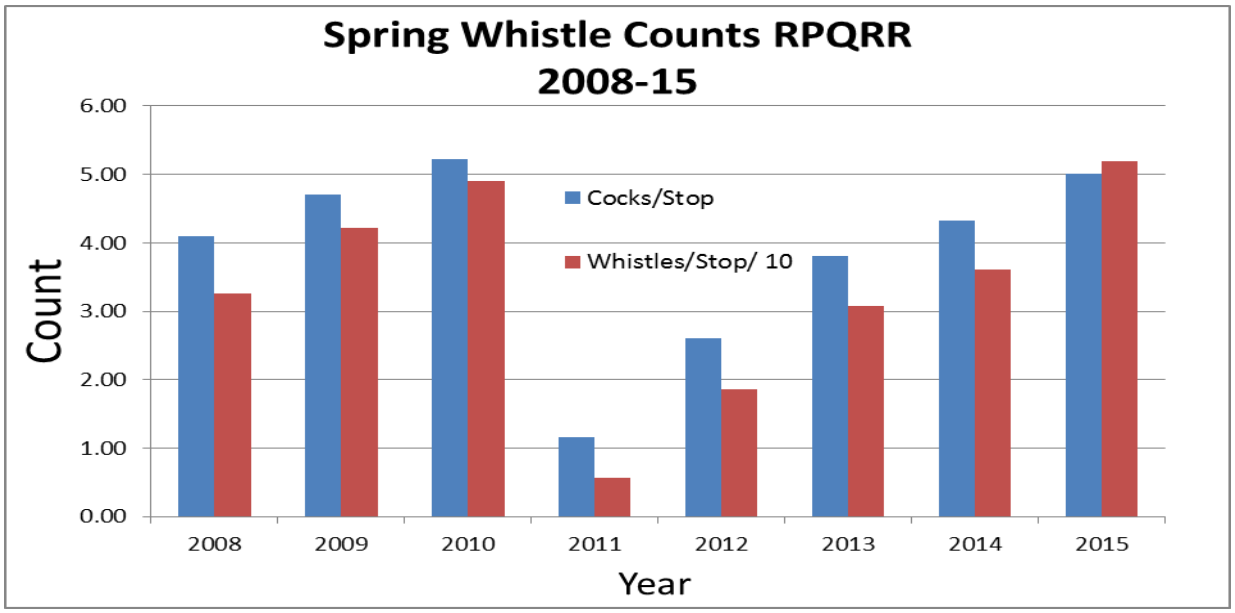
Lloyd LaCoste, RPQRR

Since 2008, we have implemented various ways to monitor quail abundance across years. These efforts include helicopter surveys, call counts (spring and fall), trapping (catch per unit effort), dummy nest survival, and fall roadside counts. We seek to determine which of these techniques will provide reliable estimates relative to the time and expense of conducting the counts. These data will be analyzed by Brad Kubecka for his Master's thesis at Texas A&M University-Kingsville.

Helicopter Counts

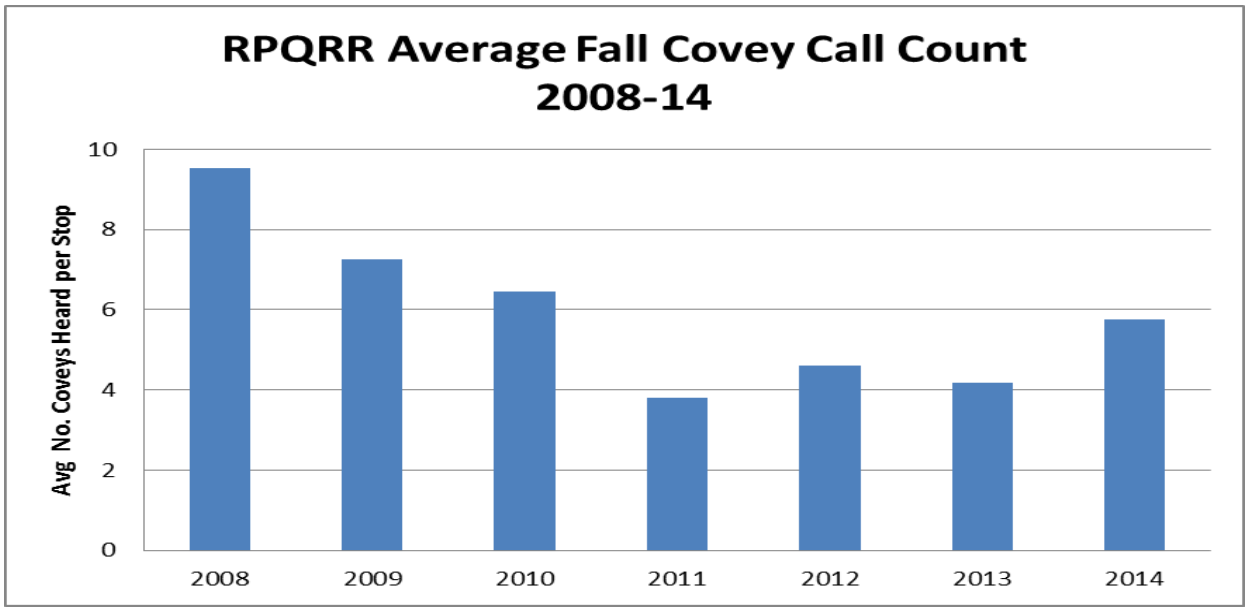
Every year we conduct 2 helicopter surveys: one in the Fall (Nov.) and one in the Spring (March). We fly the same GPS-transects with a total sampling effort of 52 miles. The Spring 2013 count revealed the lowest number of coveys to date with only 2 coveys counted. Since then we have rebounded nicely finding 32 coveys during our Spring 2015 survey. We are hopeful that our Fall 2015 surveys will top our highest survey of 54 coveys observed during the Fall





Spring Cock Call Counts

At RPQRR we conduct spring call counts at 25 "mile markers" (MM) that are spread across the ranch. The ranch is divided into an East (12 MMs) and a West (13 MMs) transect. The west transect contains 13 mile markers and the east includes 12. Counts are conducted twice weekly at each mile marker for 5 minutes. This year the counts averaged 5.01 cocks per stop with an average of 52.0 calls per stop. Typically we hear about 10 whistles/cock/stop.



Fall Covey Call Counts

We conduct fall covey call counts in October at all of our odd-numbered mile markers for a total of 2 counts, and record the mean number of different coveys heard. A crude index to bob-white density can be estimated by dividing the mean covey call count by 10, i.e., the Fall 2014 estimate would be 0.6 birds/ac. This year's covey call counts will begin next month.

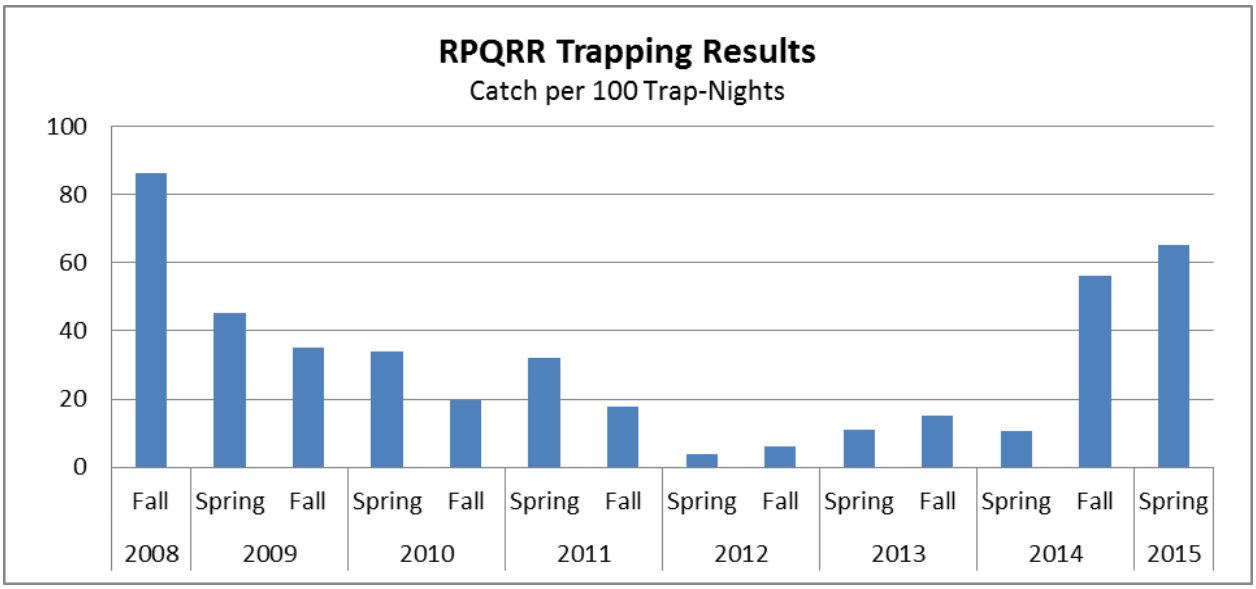
Roadside counts

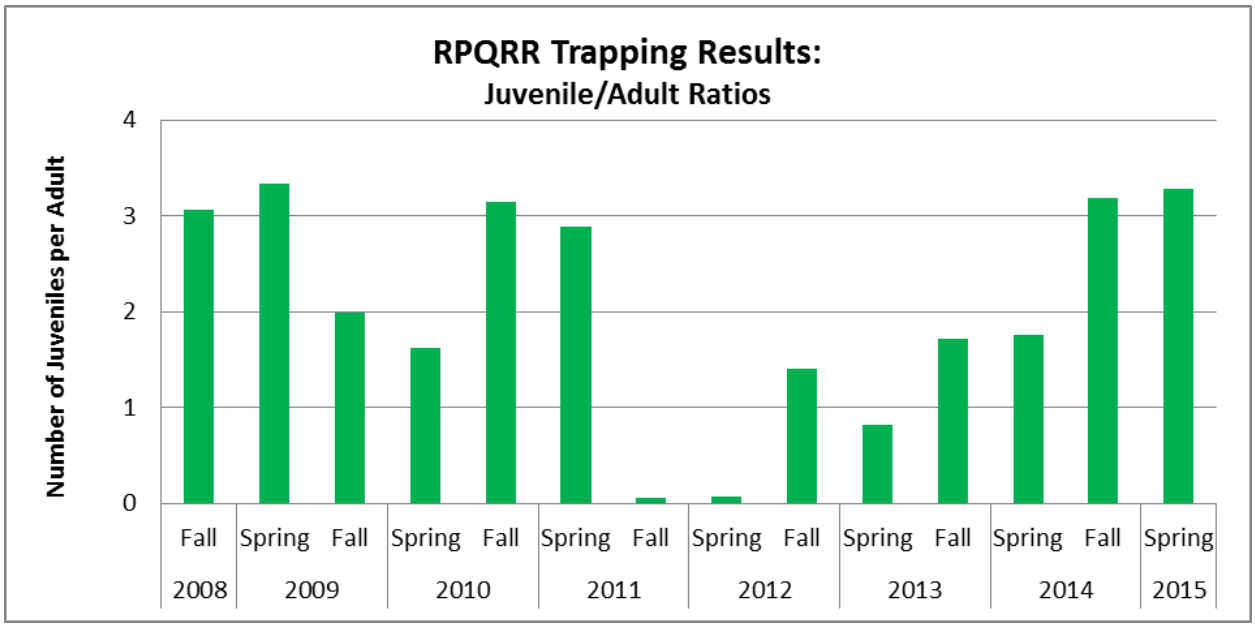
Roadside counts are easy to conduct. You simply drive a prescribed route during early-morning or late-afternoon hours and count the number of quail observed. We repeat our counts four times during September; 2 in the morning and 2 in the evening on both of our "TQI" lines. The number of birds observed per mile is an index to quail abundance. Each year during August, Texas Parks and Wildlife Department biologists conduct roadside counts on 20-mile routes across much of Texas. This table compares TPWD's mean number of quail for the Rolling Plains per 20-mile route to RPQRR's data. Our 2015 counts are (by far) the most we've ever observed at RPQRR.

Mean Number of Quail per 20-mile Route 2008-2015		
Year	**TPWD**	**RPQRR**
2008	18.7	96.0
2009	6.6	25.2
2010	8.0	29.0
2011	5.3	8.8
2012	3.5	5.5
2013	2.9	1.8
2014	7.5	52
2015	38.3	315

Trapping-banding

At RPQRR our primary purpose for trapping quail is to attach radio collars to allow us to follow the birds' movements and to monitor survival and reproduction. We also use the information collected during trapping as an index of quail abundance and to assess juvenile to adult ratios. Trapping is conducted in the Spring (Feb-Mar) and Fall (Oct-Nov) each year. We believe our trapping effort provides our most accurate count of quail because of its level of sampling intensity. With these data we can quantify our "Minimum Known Population." The J:A ratio form the Spring trapping season was 3.2 J:A.




RPQRR Trapping Results:
Juvenile/Adult Ratios
Number of Juveniles per Adult
4
3
2
1
0
Fall
Spring
Fall
Spring
Fall
Spring
Fall
Spring
Fall
Spring
Fall
Spring
Fall
Spring
2008
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2010
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2012
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Evaluation of Population Indices and Density Estimators of Northern Bobwhite

BRADLEY W. KUBEČKA, Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville, Kingsville, TX 78363, USA
FIDEL HERNÁNDEZ, Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville, Kingsville, TX 78363, USA
DALE ROLLINS, Rolling Plains Quail Research Ranch, 1262 US HWY 180W Rotan, TX 79546, USA

Various indices and population estimations such as the spring cock call index, fall covey-call counts, roadside counts, helicopter counts, and trapping are used at RPQRR to monitor bobwhite abundance. However, indices are not true predictors of abundance and are often deemed unreliable, especially for measuring response. Our objectives are 1) to compare the accuracy of indices and estimations to determine a cost-effective, reliable approach to population monitoring 2) determine which index, if any, serves as the best predictor for fall bobwhite abundance. Determining accuracy of population estimates and indices will help quail managers better gauge the success (response) of their management and make decisions for hunting season.

Nesting and Survival of Hens – 2015

Brad Kubecka, RPQRR

Birds are fitted with 6 gram radio-transmitters to document nesting ecology and survival throughout the spring and summer at RPQRR (collars are attached during Spring trapping efforts). On May 1, 2015, a total of 41 bobwhite hens were alive, on-property and being monitored daily; 32 hens attempted at least one nest (78%), 11 a second nest (27%), and one hen attempted a third (2%) for a total of 44 nests. Average clutch size for initial nest attempts was 15; additional attempts averaged 12 eggs/clutch.

Table 1. Bobwhite nest productivity and survival 2009-2015 at RPQRR in Fisher County, TX, USA.

	Total Nest Attempts	Avg. Nests per hen	% Hens Attempted Nest	% Hens Attempted 2nd Nest	# Hens Alive May 1	# Hens alive Aug. 1	% Hen Survival	% Nest Success
2009	43	0.54	41%	13%	79	27	34%	51%
2010	20	0.4	36%	4%	50	35	70%	45%
2011	10	0.14	14%	0%	73	43	59%	60%
2012	11	1	73%	27%	11	9	82%	73%
2013	16	0.59	55%	4%	27	19	70%	56%
2014	30	0.81	70%	13%	37	22	59%	58%
2015	44	1.07	78%	27%	41	27	66%	77%

Blue quail are monitored under the same protocol as bobwhites at RPQRR. On May 1, 2015, a total of 25 blue quail hens were alive and being monitored daily; 10 hens attempted at least one nest and 3 a second for a total of 13 nests attempted. Average clutch size for blues equated to 12 eggs/clutch and 85% nest success.

Table 2. Scaled quail nest productivity and survival 2013-2015 at RPQRR in Fisher County, TX, USA.

	Total Nests Attempted	Avg. Nests per hen	% Hens Attempted Nest	% Hens Attempted 2nd Nest	# Hens Alive May 1	# Hens alive Aug. 1	% Hen Survival	% Nest Success
2013*	4	0.5	50%	0	8	6	75%	75%
2014	34	0.85	66%	17%	40	30	75%	61%
2015	13	0.52	40%	12%	25	14	56%	85%

*2013 marked RPQRR pilot study for blue translocation. A total of 13 birds (male and female) were monitored.

Dummy Nests

Pete Purvis and Alison Bleich

Each June we set out 144 "Dummy Nests" (i.e., 3 chicken eggs to serve as a simulated nest); 72 are located in CRP and 72 in Rangeland. Points were selected at random for Rangeland using a random number generator to ensure unbiased sites. Once sites were determined, 6 nests were set along a 300-yard transect with each nest being approximately 50 yards apart. Each point along the transect was marked with a small piece of flagging tape. Nests were distributed as evenly (as feasible) in Pricklypear and Bunchgrass. After 2 weeks, all 144 nests were checked for "survival"; eggs in intact nests were replaced with fresh eggs. The survival rates were recorded and 2 weeks later (i.e., at the 28-day mark) the nests that survived the first two weeks were checked again. This year's survival at the end of the study was 71% for Rangeland and 58% for CRP, with an overall survival of 64% .

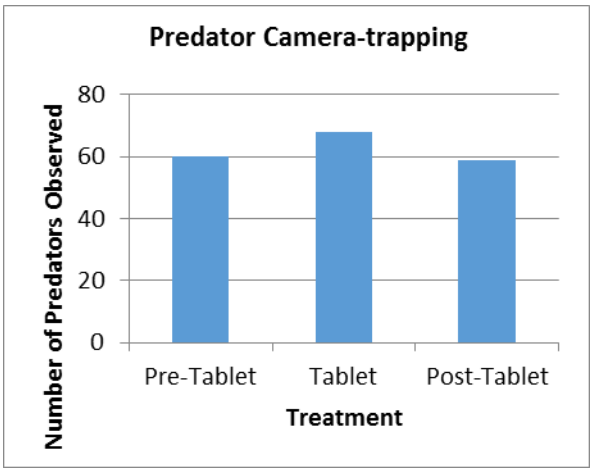
Table 1. Fate of simulated bobwhite nests (28 day exposure) and actual nests in CRP and Rangeland at RPQRR, Fisher County, TX, 2008-2015. N=72 simulated nests for each year in each habitat type.

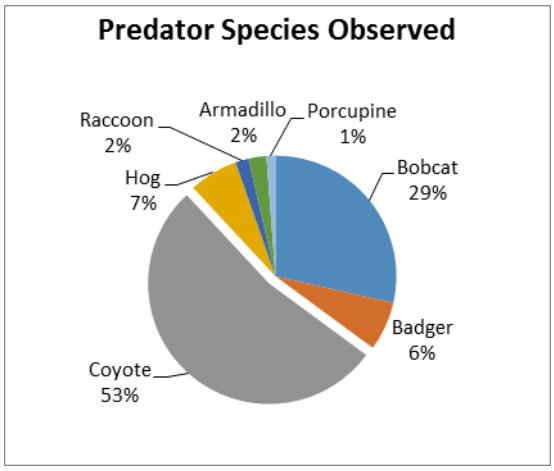
	CRP	Rangeland		
	Simulated	Simulated		Actual
Year	(%)	(%)	*n*	(%)
2008	77.8	80.6	21	57.1
2009	63.9	58.3	41	53.7
2010	63.6	86.5	18	44.4
2011	43.9	70.7	10	40.0
2012	53.5	80.0	8	75.0
2013	28.2	36.1	12	41.7
2014	51.4	78.6	63	58.7
2015	58.2	71.0	30	58.0
Mean	55.1	70.2	44	77.0

Camera-trapping to Assess Predator Abundance and Distribution at RPQR

Christine Palmer and Michael Dake, RPQRR

Game cameras were set up and turned on for one week as a pre-trial. This also helped any predators in the area acclimate to the game cameras. Following the pre-trial, cameras were set to capture images the following three weeks, giving us a total of 357 trap-nights. The first week there was no scent tablet out in order to establish a baseline of observations. For week two, there was a scent tablet in front of the camera and for the third week, the scent tablet was removed to see if any animals continued to visit the sites. Our results showed that the presence of a scent tablet did not make a significant difference as far as photo-trapping predators. Over the three weeks the cameras were out, a total of forty-nine predators were caught on camera, most of which were coyotes and bobcats (see chart). The majority of captures occurred on the east Texas Quail Index route. We did experience camera malfunctions on 3 cameras where they did not take photographs at night, so these data are biased low.





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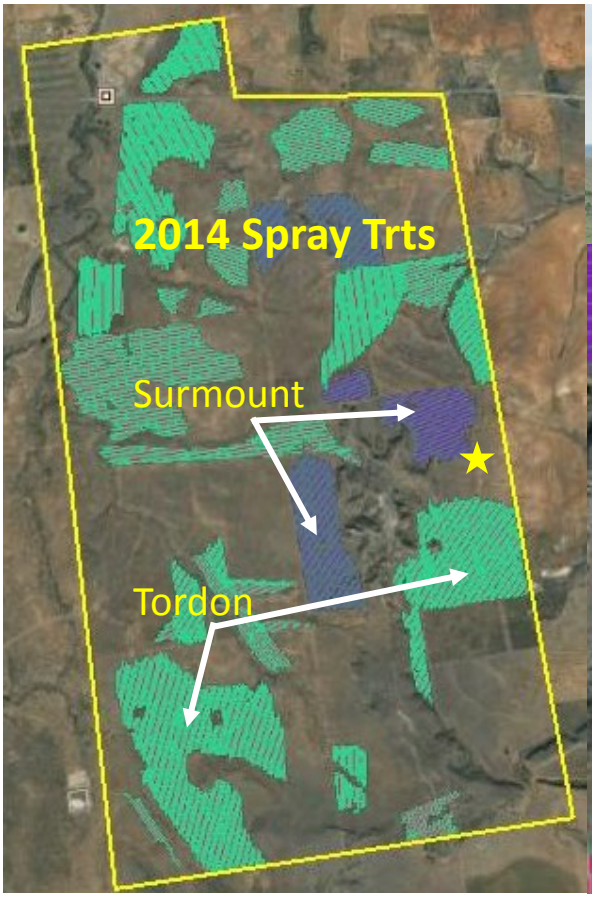
We post game camera pics frequently on our Face-book page; "like" our page to stay updated.

STOP 3

Quail translocation efforts
Collateral damage to forbs
Camera-trapping
Do feeders predispose quail to predation?



Operation Transfusion: Translocation of Wild Trapped Bobwhites into Recently Depopulated Areas

Michelle C. Downey, Dale Rollins, Fidel Hernández, and Eric Grahmann

This study examined the efficacy of translocating wild-trapped bobwhites into recently depopulated habitat in the eastern Rolling Plains as a method of augmenting population size. Specifically, this study aimed to 1) document survival (spring-summer and annual), site fidelity, and reproductive efforts of bobwhites translocated to 2 release sites and 2) compare relative abundance of bobwhites on the 2 release sites and 1 control site (received no translocation bobwhites) to evaluate the efficacy of translocation.

We translocated 409 wild bobwhites to Shackelford and Stephens counties during 2013–2014. Of these, 186 females were radio-tracked to monitor survival, site fidelity, and reproductive effort. Spring-summer (Mar–Sept) survival averaged 0.35 (n = 186 bobwhites), and annual survival averaged 0.23 (n = 186 bobwhites) during 2013–2015. Seventy-four percent (n = 112 bobwhites) of translocated females that entered the nesting season (i.e., May 1) produced a nest, which resulted in a total of 125 nests during 2013–2014. On average, nest success was 46.1%, and females nested at a rate of 1.1 nests/female. Twenty-one (32.3%) and 7 (14.8%) translocated bobwhites dispersed >2 km from their release point during the summer of 2013 and 2014, respectively (Fig 1). Relative abundance estimates of bobwhites increased similarly over time at the release sites and the control site; thus, translocation of bobwhites failed to increase the bobwhite population beyond that of a control. Assuming there is no "latent increase" (i.e., to be observed in a future time), translocation as implemented in this study may not be a viable technique to restore bobwhite populations in Texas. However alterations to the methods (e.g. , using a soft-release method) may yield more positive results relative to a population increase. We will conduct one more helicopter count in Nov to determine whether any lag effect was evident.

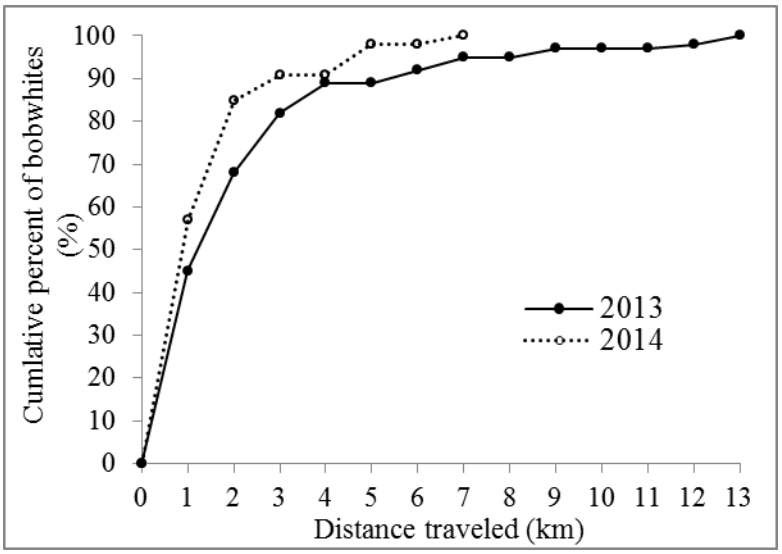


Figure 1. Relative cumulative frequency distribution of distance (km) from release point to farthest observed location of translocated, radio-marked northern bobwhites during March–September, 2013–2014.

Operation Transfusion: Translocating Wild Trapped Quail at Various Locations

Michelle Downey, Dale Rollins, Tyler Berry, Eve Dietrich, Lloyd LaCoste, Brad Kubecka, Kara Campbell, Matthew Poole, Chip Ruthven, Laine McCall, Cullom Simposon, and Olivia Maxwell

The practice of translocating wild animals in an attempt to establish, reestablish, or supplement wildlife populations has been practiced for over a century. However, past translocation of wild quail has yielded mixed results. Since 2013, RPQRR initiated the translocation of wild-trapped scaled quail and bobwhites into recently depopulated habitat (n = 5 sites) in the Rolling Plains of Texas to evaluate the use of translocation as a management tool for quail (Table 1). Female translocated quail were equipped with a radio collar in order to document survival, reproductive efforts, and site fidelity.

Wild scaled quail were translocated to RPQRR during 2013 (n = 14 scaled quail) and 2014 (n = 79 scaled quail). All translocated scaled quail were released using a "soft release" method, which entailed sequestering the quail in a Surrogator™ from March–May and providing them with feed and water. The radio-marked scaled quail translocated to RPQRR (n = 40 scaled quail) during 2014 survived the summer at a rate of 0.63. These radio-marked females also produced 40 nests at a rate of 1 nest/hen during 2014. The translocated scaled quail not only survived and reproduced well, but scaled quail presence increased after translocation. Spring whistle call counts during 2012 did not detect any scaled quail at RPQRR, but the counts during 2015 detected scaled quail at 72% (n = 18 locations) of monitoring locations. Given the positive results at RPQRR, 88 scaled quail were translocated to the Matador Wildlife Management Area (MWMA) during March 2015. The Matador project released 43 scaled quail using the soft release method and 45 scaled quail using a hard release method (i.e. birds released within 24 hours of capture). By 15 August 2015, 0 of the hard-released scaled quail were alive, 11 died, and 11 were missing. The soft-released scaled quail survived the summer slightly better; 4 were alive, 11 died, and 2 were missing by 15 August 2015. Seven nests were produced by translocated scaled quail and the longest recorded movement was ~14 miles. In order to maximize summer survival and minimize dispersal, future translocations of scaled quail should use the soft-release method.

Table 1. Translocation projects initiated by RPQRR during 2013–2015.

Species	Site	Year	No. translocated	No. radio-marked	Release method
Scaled quail	RPQRR (pilot study)	2013	14	14	Soft
	RPQRR	2014	79	40	Soft
	Matador WMA	2015	88	39	Soft and Hard
Bobwhite quail	Stephens/Shackelford Counties	2013 & 2014	409	186	Hard
	Palo Pinto County	2015	99	40	Soft and Hard
	MT7	2015	83	40	Soft and Hard

RPQRR's "Operation Transfusion" translocated 409 wild bobwhites to a well-managed ranch in Stephens and Shackelford counties during 2013–2014 (see previous page for details). All birds were released with a hard release. This project documented high annual survival, high reproductive efforts, and moderate site fidelity, but we failed to document any population increase relative to the check area. That study showed that about 1/3 of the radio-collared bobwhites were killed within 30 days of release. Most of the mortalities were caused by hawks which typically migrate in April (thus possibly a poor time to release quail). We hypothesized that bobwhite survival could be enhanced by housing bobwhites in a Surrogator™ until May 1 (i.e. a soft release). Such "sequestration" would provide them (a) time to acclimate to the new site and (b) protection from predators Therefore, RPQRR designed 2 translocation projects to assess the 2 release methods. Approximately half (40–50 bobwhites) of the bobwhites translocated to a ranch in Palo Pinto County (n = 99 bobwhites) and to the MT7 ranch in Stephens County (n = 83 bobwhites) were hard-released and the other half were soft-released. As of 22 June 2015, all but 1 radio-collared translocated bobwhite had died (n = 22 bobwhites) or were missing (n = 17 bobwhites) from the ranch at Palo Pinto. Therefore, the translocation of bobwhites was deemed a failure.

Translocation of bobwhites to the MT7 Ranch yielded more positive results. The hard-released and soft-released bobwhites translocated to the MT7 survived the summer at a rate of 0.36 (n = 19 bobwhites) and 0.4 (n = 20 bobwhites), respectively. Native bobwhites (n = 15 bobwhites) were also equipped with radio-collars at the MT7, and these native bobwhite survived at a similar rate to the translocated bobwhites. Soft-released and hard-released translocated bobwhites and native bobwhites at the MT7 produced 6, 5, and 7 nests, respectively. Overall, translocated bobwhites (regardless of release method) and native bobwhites at the MT7 survived and reproduced similarly during 2015.

Translocation of wild quail in the Rolling Plains has produced positive, neutral, and negative results. However, each translocation project provides information to help guide management recommendations that will increase the likelihood of translocation success in the future. Thus far, RPQRR recommends the use of a soft-release method for the translocation of scaled quail. RPQRR also recommends that wild quail be translocated to sites comprised of quail habitat in order to minimize dispersal and maximize translocation success.

Our plans for 2016 include (a) expansion of scaled quail translocations, and (b) continue to monitor survival and reproduction of the quail at MT7 Ranch.

Assessment of "forb shock" to prickly pear herbicides: Year 2

Zack Slick, Adrian Cain, RPQRR

In April 2014, we aerially sprayed areas of concentrated prickly pear with two herbicides (Surmount and Tordon). One concern about such treatments is "collateral damage" to forbs and woody shrubs (e.g., netleaf hackberry). Our objective was to determine whether these herbicides have collateral impacts on the forbs beneficial to quail, and if so, for how long, i.e., "forb shock."

We quantified forb abundance of 8 species in treated and check plots. The 8 forb species included: Annual Sunflower Field Ragweed, Western Ragweed, Croton Annual broomweed, Texas wintergrass, Silver bluestem, and Pricklypear . In each polygon, a round, 1-m^2 quadrat (i.e. hula hoop) was used to define each sampling unit. Each 10 steps we documented presence or absence of each forb specie in ≥1,000 samples per polygon.

July 2014

	Surmount	Tordon	Control
Forb %	25.7	19.6	55.8
Pricklypear %	28.3	32.2	20.0

July 2015

	Surmount	Tordon	Control
Forb%	67.0	74.1	75.5
Pricklypear%	26.2	15.5	29.2

When comparing these treatments realize that spray treatments were targeted on the thickest prickly pear, i.e., "control" therefore had lower pricklypear abundance. Forb occurrence was more equitable across treatments in 2015 There was a larger decrease in Tordon areas than Surmount, something we will continue to monitor for a third year (these herbicides can take up to 3 years in order to see full results). In terms of our forb species, we saw a large increase across the board, and this includes our prickly pear control areas. We attribute this to the amount of rainfall we've had this year thus far. We will continue to monitor these sites again in 2016.

In-kind funding provided by Dow AgroSciences, LLC.

Does access to feeders predispose quail to predation?

Jason Davis, Abilene Christian University, RPQRR

The use of feeders for management of quail populations is a common practice among land owners and managers. How often do quail utilize these feeders compared to other wildlife species? Are there times of the year that we can more specifically target quail with feeders? How much does it cost to provide year-round supplementation with milo via feeders? Do fixed-location feeders predispose quail to predation, i.e., "if the quail know where the feeders are so do the hawks." Earlier this summer we set up 28 "Currie" (barrel) quail feeders to monitor throughout the ranch in order to try and shed light on these questions. Ten feeders have been randomly selected throughout the Deuce, Tex, Doc, and James pastures to monitor with Bushnell game cameras. All 28 feeders will be monitored for feed disappearance. We will use a GIS spatial analysis of mortalities observed at RPQRR from 2008-2015 to assess whether predation was related to the proximity of feeders.

Funding provided by Abilene Christian University and RPQRR.

Lunch

At the Pavilion

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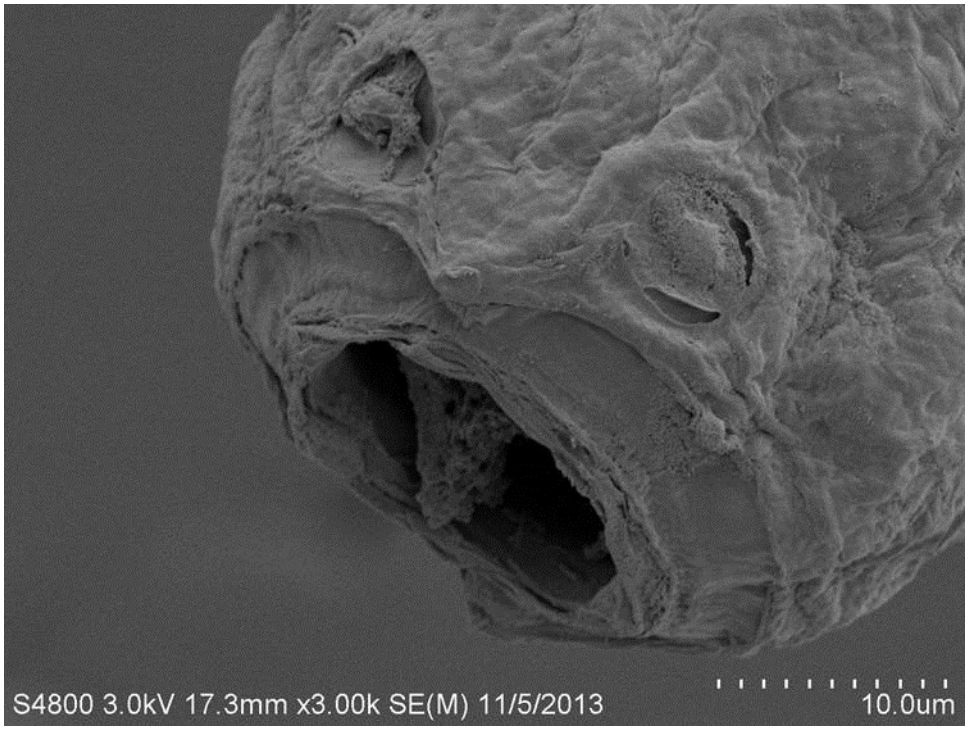
The Wildlife Toxicology Laboratory Project Update

Nicholas R. Dunham and Ronald J. Kendall, Ph.D., Wildlife Toxicology Laboratory

The Wildlife Toxicology Laboratory at Texas Tech University is continuing the monitoring of eyeworm infection in wild quail throughout the Rolling Plains of Texas. Our data have continued to reveal that there can be significant eyeworm infection in quail throughout the region. We now know, as supported by widespread sampling across the Rolling Plains, that the eyeworm is now endemic in this ecoregion. Eyeworms have been documented to cause severe inflammation and edema to tissues behind the eyeball which likely impairs a quail's vision.

Bobwhites throughout our sampling area have been found to have significant eyeworm infection since the summer of 2013 (range: 0-107). Additionally, eyeworm infection is a cumulative process meaning that the infection probably builds up in the bobwhite until the bird either becomes impaired and/or dies. Additional evidence has also revealed that quail in the Rolling Plains are significantly infected with cecal worms, another parasitic nematode. In some of our sample zones, the Wildlife Toxicology Laboratory revealed cecal worm infections in quail to be substantial and could exceed 90% of individual quail in sampling that occurred in 2014 and 2015.

Due to the heavy eyeworm infection in wild quail and the documentation of damage to the quail's eye, the Wildlife Toxicology Laboratory is performing experiments in quail to determine if eyeworms do, in fact, reduce a bobwhite's ability to see. These vision experiments have included flight testing to determine navigation ability with infected birds. Additional experiments are underway in both the laboratory and the field to determine the degree of infection and the consequences of nematode infection in wild quail.



Funding provided by Rolling Plains Quail Research Foundation and Park Cities Quail.

Parasitological Survey of Scaled Quail from the Western Rolling Plains of Texas and Surrounding Areas

Kelsey A. Bedford, Alan M. Fedynich, and Dale Rollins

The objectives of this study were to determine the influences of host age, host sex, host weight, hunting season of collection and Palmer's Drought Severity Index (PDSI) on helminth infections and to document pathological responses of infected tissues. A total of 204 scaled quail was collected from west Texas. Thirty-four were trapped in cooperation with the Operation Idiopathic Decline (OID) conducted in 2012 and 2013. Additionally, hunters donated 170 quail during the 2012–2013, 2013–2014 and 2014–2015 Texas quail hunting seasons. Histological analyses were conducted on scaled quail intraorbital glands (n = 4) and ceca (n = 6). Because of small sample size, OID collected scaled quail were not examined statistically. Considering the entire OID and hunter donation samples together, 7 helminth species were found. Cecal worms dominated numerically (95% of total) followed by eyeworms (4% of total). Assessment of the intraorbital glands found an increase of lymphocytes, indicating an immune response and acinar atrophy in the Harderian glands sampled when eyeworms were present. Additionally, cecal villi of samples with 213 and 396 cecal worms displayed an increase of lymphocytes and plasma cells and experienced localized epithelium separation. This study provides baseline information that will benefit parasitologists, biologists and managers in future helminth research and management.

Funding provided by the CKWRI and RPQRR.

Summary statistics of prevalence, intensity, and abundance of *O. petrowi* in hunter-shot and OID-trapped scaled quail.

Year	Sample Size	Prevalence	Mean Intensity	Range	Mean Abundance	Total
OID	2012	13	54%	4.8 ± 2.1	1–15	0.5 ± 0.3	24
	2013	17	24%	4.0 ± 1.0	3–5	2.0 ± 0.4	12
Hunter-shot	2012–2013	28	21%	2.7 ± 1.2	1–8	0.6 ± 0.3	16
	2013–2014	73	77%	6.1 ± 0.8	1–21	4.2 ± 0.7	309

Histological section of a Harderian gland from behind the eye of a scaled quail infected with an eyeworm. Note the ducts (arrow), which display acinar atrophy in the infected scaled quail.

Reversing the Decline of Quail in Texas Initiative

Becky Ruzicka, Texas A&M Agrilife Extension Service, Dallas

Funding of $2 million directed by the 83rd Texas Legislature and authorized by Texas Parks and Wildlife Department launched the Reversing the Decline of Quail in Texas Initiative (RDQI) in 2013. According The ultimate objective is to address and reverse the decline through Extension education and research on factors that reduce quail populations.

Research Component Thirteen research projects were funded to address quail decline and field and lab work for projects began in December 2013 and are still ongoing. Emphasis was placed on the following priority areas:

- investigations into the impact of parasites,
- examination related to the impact of toxins,
- field studies on health factors influenced by environmental conditions,
- impact of predation,
- effectiveness of translocation to repopulation depleted areas,
- diagnostic testing for diseases thought to impact quail survival, and
- genomic sequencing and bioinformatics related to quail population.

These investigations are being conducted by different research institutions across the state including Texas A&M University, Texas A&M University – Kingsville, Texas Tech University, University of North Texas, Texas A&M AgriLife Research, and the RPQRR.

Extension Component Extension is the vehicle to translate and relay research findings to agricultural producers, wildlife managers, and the general public. We choose to use an integrated approach to accomplish these goals, combining traditional face-to-face programs (high-touch) with novel methods using the internet (high-tech).

- ***Texas Quail Index*** **(TQI)** A series of hands-on demonstrations, run by our County Extension Agents designed to educate land managers, hunters, and other about quail population dynamics. For more information, see TQI abstract in this program.
- ***Quail Appreciation Days*** Six-hour hands-on workshops, held across the state. In total, 17 Quail Appreciation Days were held from 2014 to 2015.
- ***QuailMasters*** A series on intensive class in quail management and conservation for 'serious students of quail.' Each class consists of four 3-day sessions held at different locations across the state.
- ***Bobwhite Brigades*** A youth-focused camp in it's 23rd year created by Dr. Rollins. The brigades camps give youth experience in critical thinking, communication, leadership, and team building, while learning about quail biology, habitat management, population dynamics, and ecology.
- ***Social media*** New quail related Extension educational videos posted to WFSC AgriLife YouTube and AgriLife's Internet TV Channel, AgSmart TV, were viewed ____ times. The new Reversing the Quail Decline Initiative Facebook page grew to more than 3,400 "likes" in a short period, since January 2014.
- ***Mobile phone apps*** Two free quail related iPhone apps, a habitat evaluator and management calendar, were developed and released to add more diversification to the delivery mediums.
- ***Webinars*** In 2014 and 2015 four webinars were available for live listening and questions.

The Texas Quail Index

Becky Ruzicka and Dale Rollins, Texas A&M AgriLife Extension Service

The Texas Quail Index (TQI) is a series of hands on demonstrations organized by the Texas A&M AgriLife Extension Service. It is designed to educate land managers, hunters, and others about population dynamics, habitat requirements, and other factors affecting bobwhite and scaled quail in Texas. At the county level, TQI fosters landowner and community involvement and provides tools for interested stakeholders to assess the "quail-equation" in their community. Statewide, the TQI provides an important opportunity to use citizen-science to help monitor the abundance of quail and bring attention to their importance, plight, and needs. It starts by recruiting the Texas A&M AgriLife County Extension Agent (CEA) for a particular county to participate in the TQI. They in turn find a ranch or other suitable property willing to serve as the demonstration site. The CEA is also responsible to for recruiting other members of the team from their community. This team could be: the hunters who have a lease on the property, a former QuailMaster in the area, a former Bobwhite Brigade student, a Master Naturalist, agency personnel (NRCS or TPWD), and, ideally, a member of the local media. These teams are responsible for collecting data on quail abundance, predator abundance, and habitat quality on the participating site.

Funding provided by Texas A&M Agrilife Extension service's Reversing the Quail Decline Initiative and the Big Covey Chapter of Quail Coalition.

Members of the Rolling Plains Chapter of Texas Master Naturalists are conducting the Texas Quail Index in Wichita County along with Agrilife CEA David Graf. (back row, middle)

Southern Rolling Plains Prescribed Burn Association

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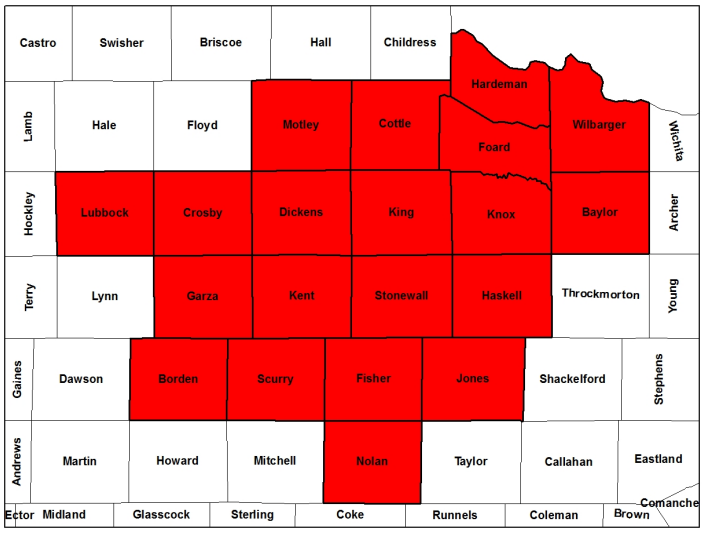
Our Mission:

The SRPPBA of Texas is dedicated to promoting land stewardship through the safe use of prescribed fire and to helping reduce fuel loads in support of wildfire prevention and mitigation through education, support, technical expertise, leadership, guidelines, and standards for the safe application of prescribed fire. Counties include: Baylor, Borden, Cottle, Crosby, Dickens, Fisher, Foard, Garza, Hardeman, Haskell, Jones, Kent, King, Knox, Lubbock, Motley, Nolan, Scurry, Stonewall and Wilbarger. Membership benefits include joining a network of land owners interested in prescribed fire and access to specialized equipment that can facilitate conducting prescribed fires for a small usage fee. The SRPPBA also provides a variety of educational opportunities and resources related to prescribed fire in the Rolling Plains of Texas.

Who we are:

Like minded members of the community who believe in and use prescribed fire as a tool in the management of the land and ecosystem.

We have three prescribed burn equipment trailers spread out across the 20-county region, currently located in Paducah, Roby, and Lubbock. Each one is fully stocked with tools for weather, ignition, suppression, communication, and safety. They are available to you as a member for a daily rental fee.



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Monitoring Texas Horned Lizards in the Rolling Plains of West Texas

Dallas Zoo Department of Herpetology, Dallas Zoo Management, Inc.

The Texas Horned Lizard, *Phrynosoma cornutum*, is perhaps the most recognizable species of Horned Lizard. It is the largest native species of Horned Lizard (Family: Phrynosomatidae) and has the widest distribution of any other Horned Lizard in the Unites States. Once extremely common throughout their range, Horned Lizards in general are now known to be in decline. The Texas Horned lizard perhaps the most threatened member of this group, with estimated population declines of greater than 30% across its range (Texas, Oklahoma, Kansas New Mexico, and northern Mexico) and even higher in its population epicenter, Texas (Linam 2008, Henke 2003). Currently the Texas Horned Lizard is listed by Texas Parks and Wildlife as a "Threatened Species". This status provides limited protection by prohibiting private ownership and/or collection from the wild without a TPW permit and outright banning any related commercial activity.

We began preliminary data collection ion THL abundance at RPQRR n the summer of 2010 and have continued through 2014 active season, which is typically May—Oct. Our goals have been to determine Texas Horned Lizard population density estimates, determine habitat preferences, and gather basic life history traits including movement patterns, environmental preferences, behavior and spatial relationship with Harvester Ants.

Our current method of collecting data consists of road surveys or "road cruising." Once spotted, the lizard is captured by hand. Lizards are then marked with an electronic tag (PIT Tag), a tool used to determine population density through mark and recapture. In addition we are collaborating with Drs. Dean Williams and Amanda Hale, Biology department of Texas Christian University, in their efforts to determining fine-scale sex-biased spatial distribution patterns. This is accomplished by opportunistically taking DNA samples from capture animals with a cloacal swab.

During the 2011 season we started using a smaller PIT tag allowing us to permanently mark a larger number of subadult lizards, lowering our minimum taggable size from 60mm snout to vent length (SVL) to 50mm. While this has not increased our total capture number as of yet, it allows us to expand the size of our permanently-marked group which provides more potential for positive identification upon recapture. To date we have spent roughly 720 hours sampling roads resulting in close to 1,200 captures. Approximately 750 have been PIT tagged and 105 have been recaptured at least once.

The total number of lizards captured in 2014, to date, is approximately 300. This is considerably higher than last year's count, but we have also logged more hours on the road so far in 2014, 117 hours vs. 84 hours in 2013. Our LPH (lizards per hour) is right at 2.5 this season, which is an improvement over last year and higher than our average, 1.67 LPH, since the beginning.

Overall we feel like this has been a good year for horned lizards at RPQRR. As for the expanded presence of oil-related disturbance, the impact is too early to assess. However, the numbers are good this year and we have found lizards close to oil wells already. They will likely return to "normal" when the disturbance is past and as the vegetation grows back. We will eventually have a very good before and after comparison with regard to the presence of oil wells on the ranch.

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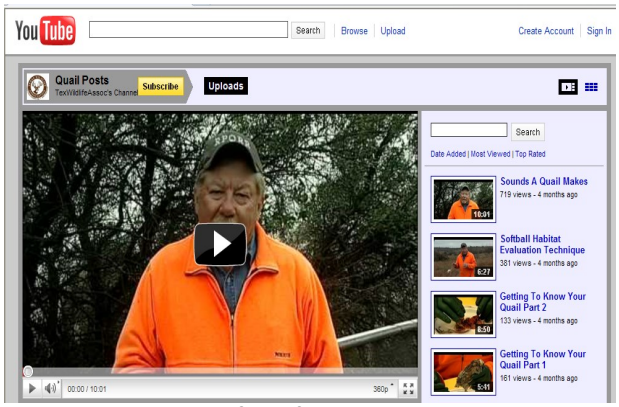

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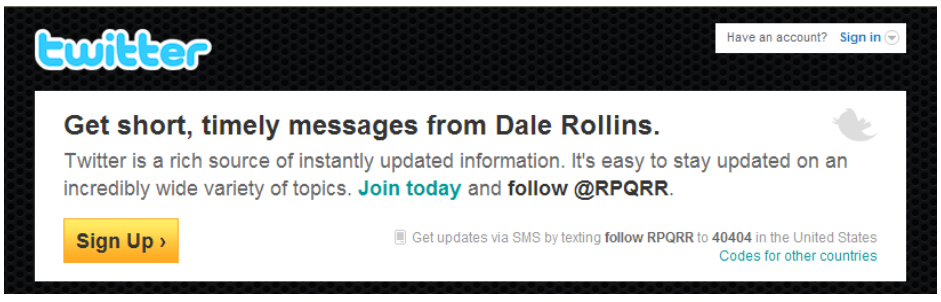

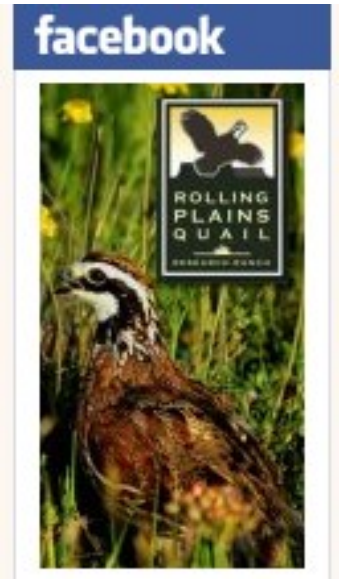

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