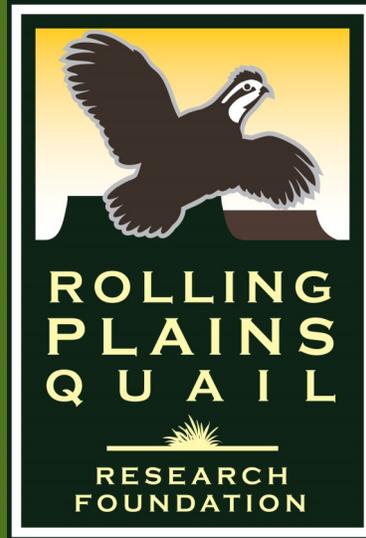




ROLLING
PLAINS QUAIL
RESEARCH
FOUNDATION

2021 ANNUAL REPORT



ABOUT US

The Rolling Plains Quail Research Foundation (RPQRF) is a 501 (c)(3) non-profit focusing on one thing: understanding and managing bobwhite and scaled quail in West Texas. Everything we do centers around quail and quail hunting, as reflected by our mission:

*To preserve Texas' wild quail hunting heritage,
for this, and future generations.*

The foundation and its Research Ranch were established to provide a living laboratory to devise land management strategies for the benefit of quail and also as an exemplary property to demonstrate the best methodologies and techniques to other “students of quail.”

TABLE OF CONTENTS

BOARD OF DIRECTORS AND STAFF ...	2
FOUNDATION MESSAGE ...	3
LONG-TERM DATA AT THE RESEARCH RANCH ...	6
DOUBLE T RESTORATION ...	18
TEXAS WINTERGRASS REDUCTION ...	20
FEED EFFICACY STUDY ...	22
QUANTIFYING CRIPPLING LOSS ...	25
ERATH COUNTY TRANSLOCATION ...	26
KENT COUNTY TRANSLOCATION ...	28
DONOR RECOGNITION ...	30

Board of Directors

JOE CRAFTON—PRESIDENT

GARY COONEY

DAN CRAINE

PETE DELKUS

DR. DWAYNE ELMORE

RUSSELL GORDY

STEPHEN HOWARD

RAYMOND MORROW

STEVE SNELL

RICK SNIPES

JUSTIN TRAIL

Contact

WWW.QUAILRESEARCH.ORG

MAILING ADDRESS

P.O. Box 220

ROBY, TX 79543

RANCH ADDRESS

1262 U.S. HIGHWAY 180 WEST

ROTAN, TX 79546

Staff

DR. BRAD KUBECKA—EXECUTIVE DIRECTOR

979-702-9691 • bkubecka@quailresearch.org

DR. DALE ROLLINS—DIRECTOR OF OUTREACH

325-650-0311 • drollins@quailresearch.org

BECKY RUZICKA—RESEARCH SCIENTIST

661-618-3956 • becky.ruzicka@quailresearch.org

JON PURVIS—RESEARCH BIOLOGIST

512-217-7721 • jpurvis@quailresearch.org

DANIEL KING—DIRECTOR OF OPERATIONS

JOHN PALARSKI—RESEARCH ASSISTANT

CASEY SWAFFORD—LEAD TECHNICIAN

NICK WIRAM—LEAD TECHNICIAN

AUDREY CURTIS—TECHNICIAN

DRAKE DANCILA—TECHNICIAN

LUKE MICEK—TECHNICIAN

WILL PALARSKI—TECHNICIAN

HUNTER PARKER—TECHNICIAN

MICHEALA PINEDA—TECHNICIAN

RYAN RIFENBURG—TECHNICIAN

RUBY ROLLAND—TECHNICIAN

ADAM VONDERSCHIDMT—TECHNICIAN

A Message

FROM THE ROLLING PLAINS QUAIL RESEARCH FOUNDATION

The past year ushered in a new era for the Rolling Plains Quail Research Foundation. In May of 2021, Dr. Dale Rollins stepped down from his role as executive director to take on a role as Director of Outreach, focusing on delivering the Foundation's research and conservation messaging. Dr. Rollins was instrumental in founding and developing the Foundation over the past 13 years into what it is today. The board of directors was proud to introduce Dr. Brad Kubecka as the new Executive Director and to announce that it will break ground on a new headquarters. The new, 6,400 sq. ft. headquarters will include the Park Cities Quail Coalition Education Center, James R. Currie Research Lab, and Gordy Family Guest Lodge.

Exemplary research, management, and outreach takes an exorbitant amount of time and energy — the kind our team members relentlessly dedicate to our mission: preserving Texas' wild quail hunting heritage for this and future generations. This year our small but growing and talented staff worked hard to make a difference for quail conservation by establishing new projects, collaborators, and partnerships, as well as continuing our previous long-term research and efforts. The challenges presented to quail today are not insurmountable, but modern-day challenges require modern-day solutions and thinking. Past information may now be irrelevant or simply incorrect due to changing landscape conditions or incomplete information. For nearly 50 years, bobwhite were considered monogamous — a blatantly incorrect fact about a simple life history trait that was proven false by the advent of telemetry technologies. Persistence, new technology, ideas, approaches, and acceptance of new information from replicated experiments have been and will continue to be crucial to advancing our mission in an ever changing and heterogeneous landscape.

We celebrate the end of a successful year and era in our developing foundation's history and we look forward to the future — all due to your philanthropy. RPQRF simply could not execute its mission without your support. Thank you.







RPQRF broke ground on a new headquarters facility at our research ranch near Roby, Texas on May 7, 2021. The \$2.4 million facility was funded with generous gifts from Park Cities Quail Coalition and private individuals and is expected to be completed in June 2022. The new 6,400 sq. ft. Rolling Plains Quail Research Foundation headquarters is comprised of three buildings:

The **James R. Currie Research Lab** will include offices, conference space and a research laboratory, which will allow RPQRF to increase its technical research capacity and accommodate the various needs of RPQRF's graduate students, technicians, and staff.

The **Park Cities Quail Coalition Education Center** will provide ample space to host presentations and seminars for biologists, students, landowners, ranch managers, and field day attendees. It will also serve as a classroom for RPQRF's Veterans Sporting Ranch Training Program, a new four-month series of courses to equip military veterans with the knowledge and skills necessary to earn a living as wildlife habitat and ranch managers.

The **Gordy Family Guest Lodge** will contain six bedrooms, three bathrooms, a living area and kitchen to host overnight visitors at the Research Ranch. Expected guests include biologists from government agencies, ranch managers seeking guidance on habitat management, researchers from other conservation organizations and visitors participating in multi-day events. The lodge will also house military veterans enrolled in the RPQRF's new Veterans Sporting Ranch Training Program.

LONG-TERM DATA COLLECTION

AT THE ROLLING PLAINS QUAIL RESEARCH RANCH

The Rolling Plains Quail Research Ranch was gifted to RPQRF through the generosity of the Richard King Mellon Foundation and the Conservation Fund in 2006 to be a living laboratory for quail research and education. The Research Ranch arguably has the most comprehensive dataset on quail in Texas, with over 16,000 banded and 3,000 radio-tagged quail. In contrast to the typical 2-3 year study duration, we have datasets spanning 10+ years.

The following sections provide a summary of our long-term data collection efforts. These data have been used to support many graduate student projects over the years and various in-house scientific publications. You can find our growing body of research archived on our website (www.quailresearch.org).



Joseph Richards



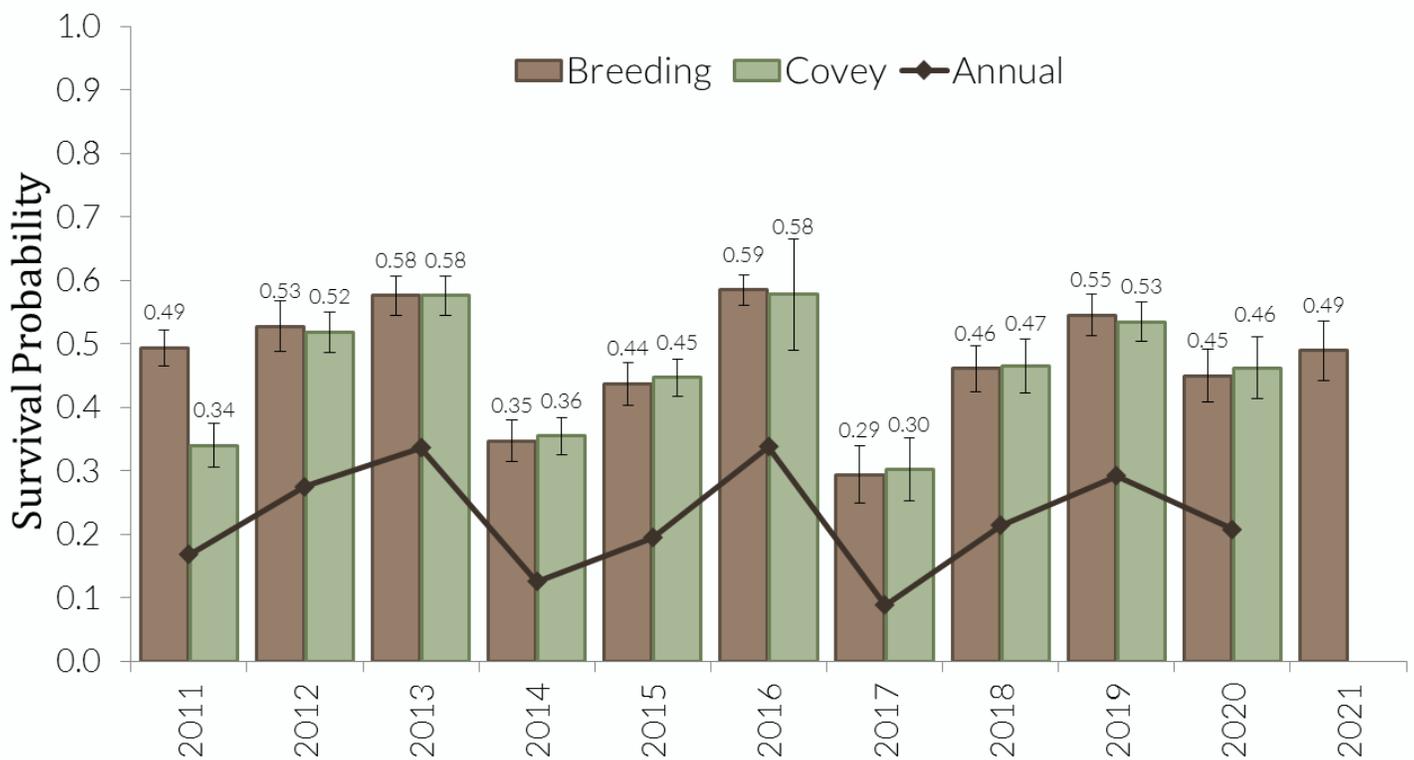
Joseph Richards

QUAIL

DEMOGRAPHICS

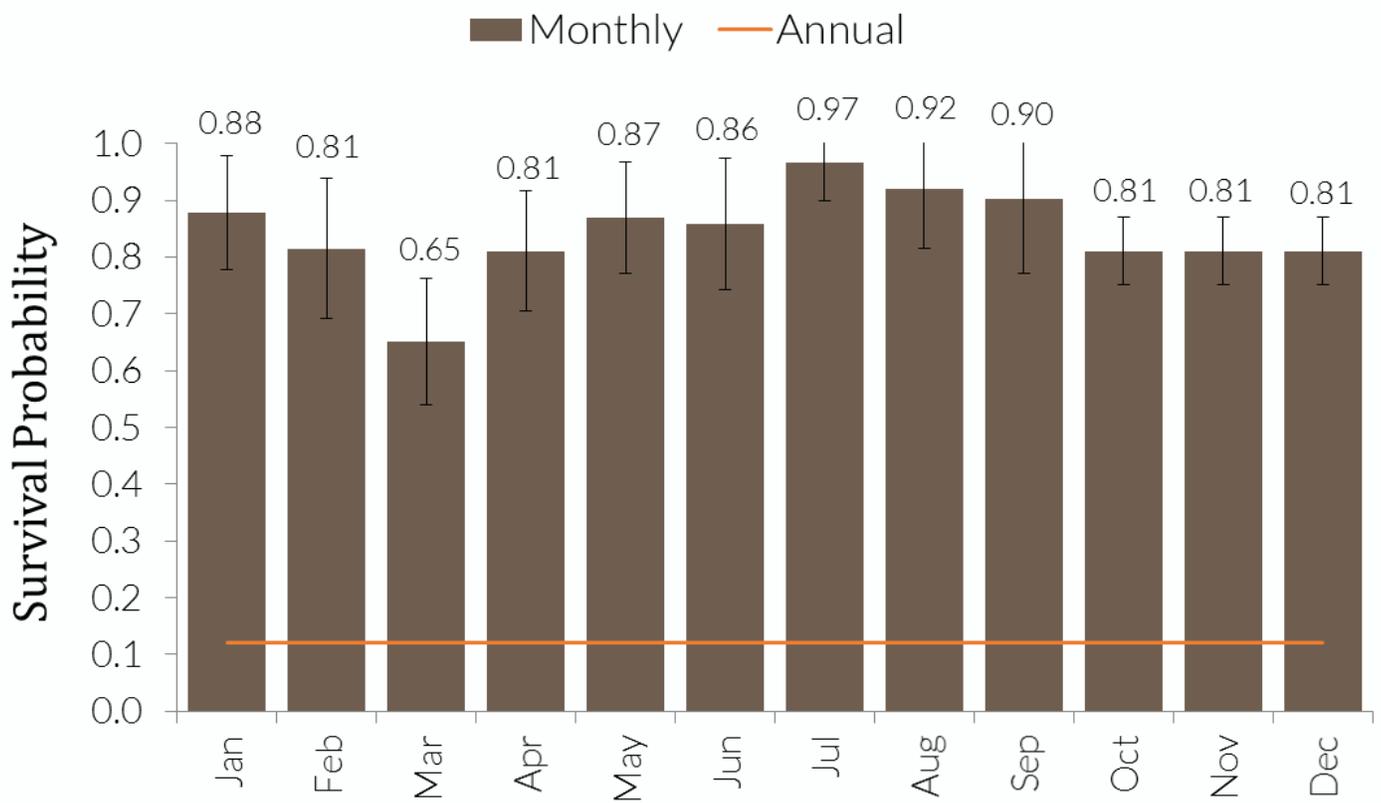
AT THE ROLLING PLAINS QUAIL RESEARCH RANCH

Our primary source of information on quail demographic rates (e.g., adult survival, nesting success, nest initiation, etc.) comes from data collected via radio-telemetry. We attach 6-g radio transmitters to adult and juvenile quail in spring and fall. Radio-marked birds are followed year round.



ANNUAL QUAIL SURVIVAL

Seasonal variation in breeding (April-September) and non-breeding (October-March) season survival on the Research Ranch. Note that estimates of non-breeding season survival span two calendar years (e.g. October 2011 through March 2012). Annual estimates are the product of breeding and non-breeding season estimates, thus also span two calendar years (e.g. April 2011–March 2012).



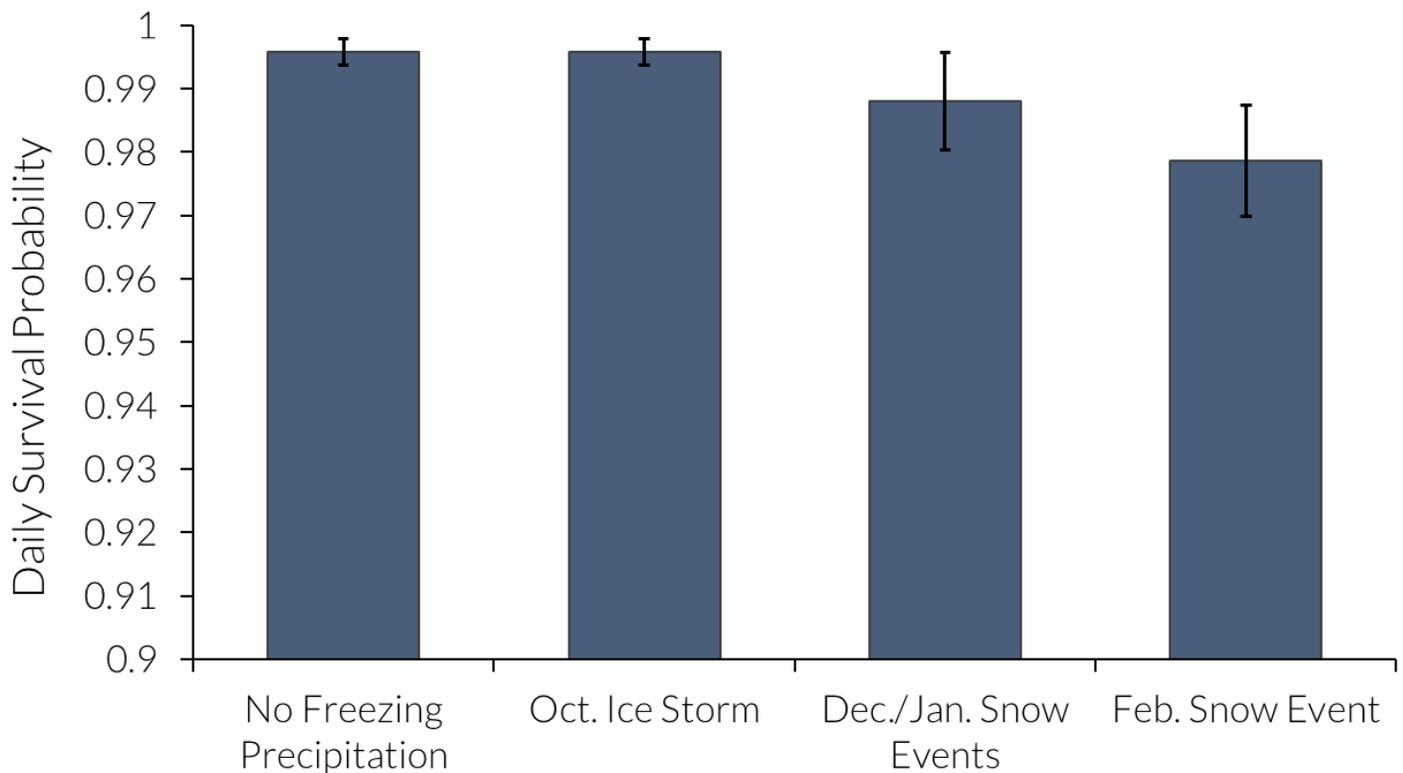
2021 MONTHLY SURVIVAL

Monthly survival for a sustainable population should average above approximately 0.8 and when on the lower end survival needs to be balanced by higher reproduction. The average monthly survival in 2021 was 0.81. Survival in March was one of the lowest on record at the Research Ranch and is attributable to the delay in raptor migration and holdover effects from Winter Storm Uri.

WINTER STORMS AND QUAIL SURVIVAL

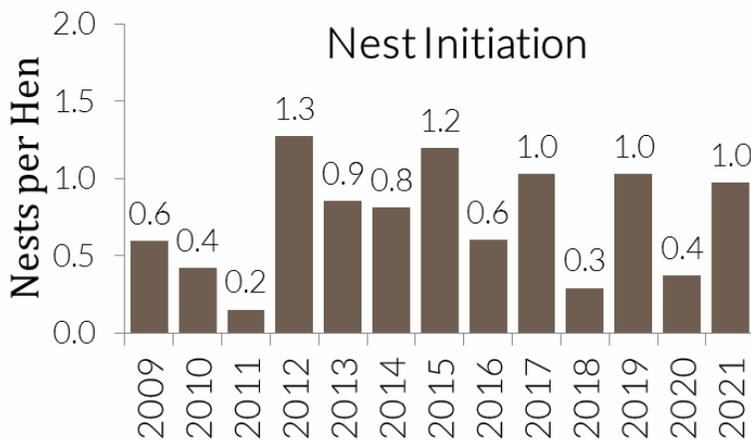
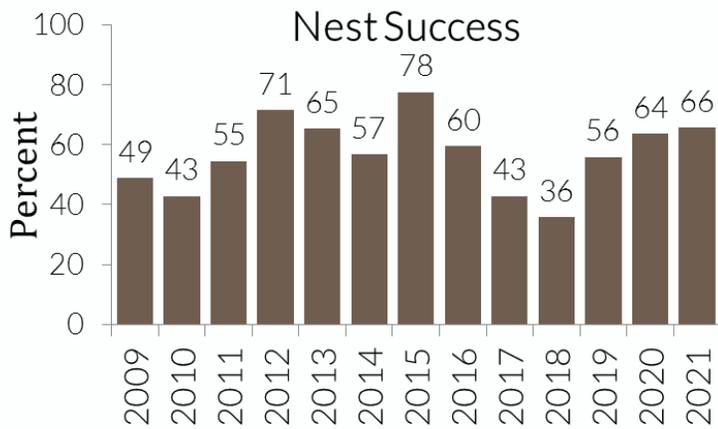
AT THE ROLLING PLAINS QUAIL RESEARCH RANCH

The weather we experienced in the winter of 2020-21 was one the coldest and snowiest Texas has seen in many decades. One of the questions on the forefront of everyone's mind has been: how did our quail fare? To shed some light on that question, we analyzed data from radio-collared quail (primarily northern bobwhites) on the Research Ranch from 1 October 2020 to 15 March 2021. We estimated daily survival of quail during four time intervals using multistate mark-recapture models. We found no acute (i.e., day of) nor chronic effects (i.e., up to 10 day lag) of the October ice storm when compared to periods of time with no freezing precipitation. However, the December/January complex and February snow storms we received were correlated with a chronic decrease in survival. On average, a quail was 2.5 times more likely to die during the December/January complex compared to periods with no freezing precipitation. After the February blizzard a quail was 4.5 times more likely to die compared to periods with no freezing precipitation. Interestingly, acute effects of any storm were undetectable. This indicates that quail did not die directly from exposure in cold and wet weather, but rather from poor body condition and/or increased exposure to predators. In either case, the ultimate cause was likely a lack of food.

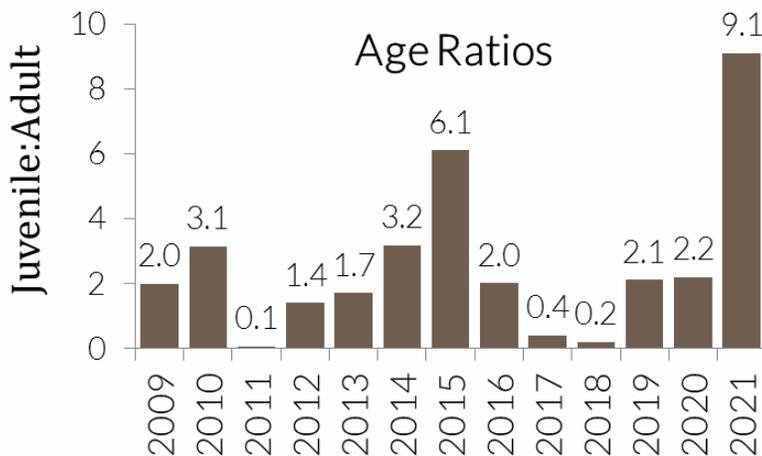




Casey Swafford



Nests initiated per bobwhite hen throughout the breeding season are based on the number of hens alive on May 1.



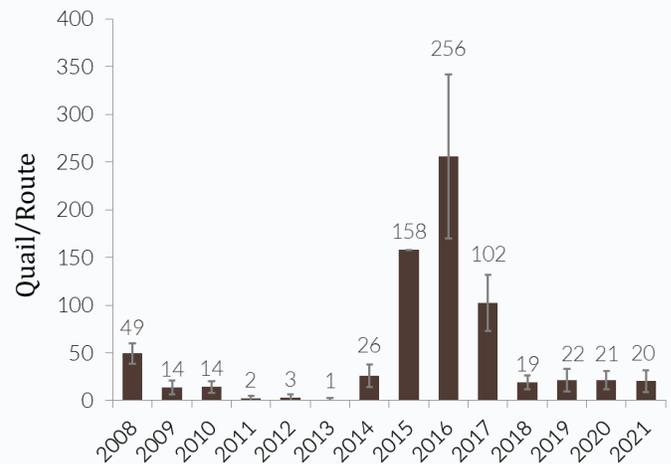
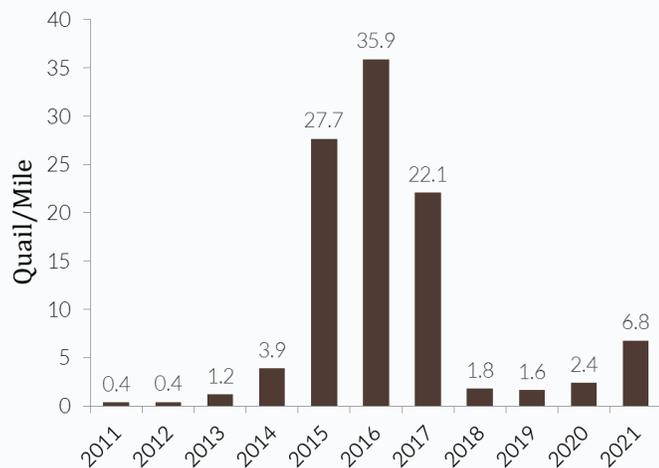
Age ratios are calculated from bobwhites captured during fall trapping sessions across the Research Ranch.

REPRODUCTIVE METRICS

Radio-marked bobwhite hens are followed throughout the breeding season to collect data on reproductive metrics.

QUAIL ABUNDANCE AT THE ROLLING PLAINS QUAIL RESEARCH RANCH

We implement a variety of methods for monitoring quail abundance each year. Our goals are two-fold: 1) to track changes in abundance over time to tease apart driving factors and measure response to land management practices, and 2) to provide reliable and easy to implement indices for land managers to implement on their own properties. Details of these methodologies for monitoring abundance and summaries of annual updates follow.

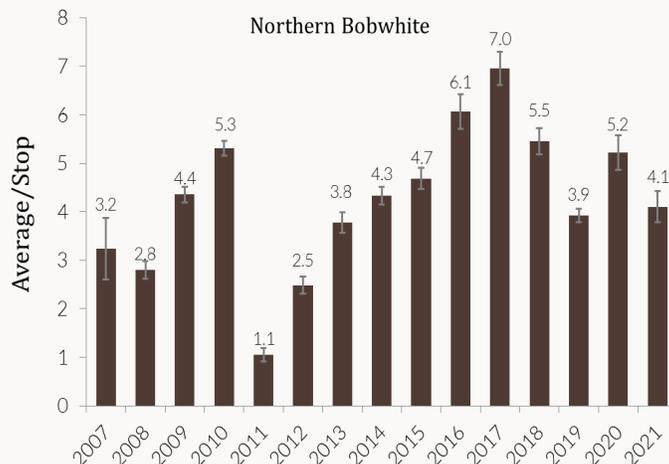
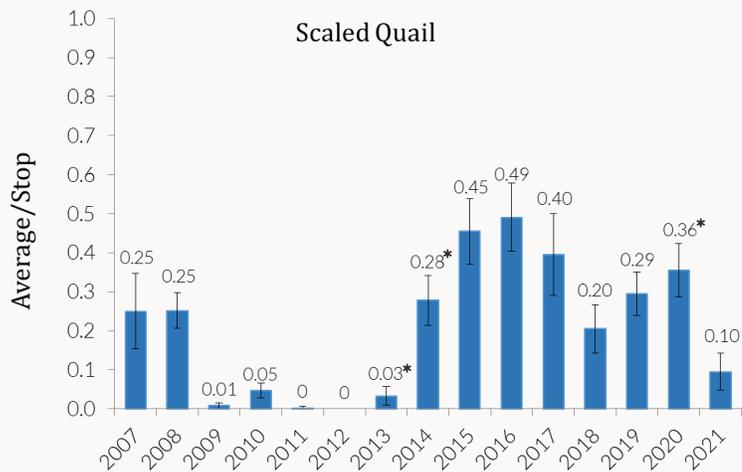


HELICOPTER COUNTS

We fly 52 miles of helicopter surveys in the fall (November) and spring (March) using distance sampling methods. The data presented here combine both species of quail (bobwhite and scaled) in an index of abundance.

ROADSIDE COUNTS

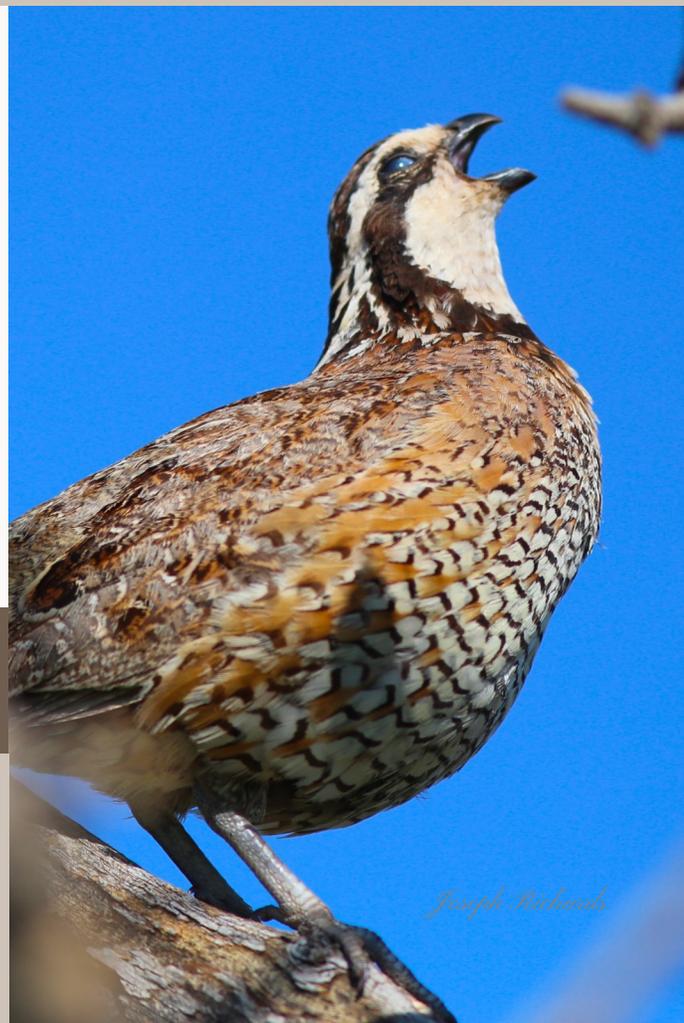
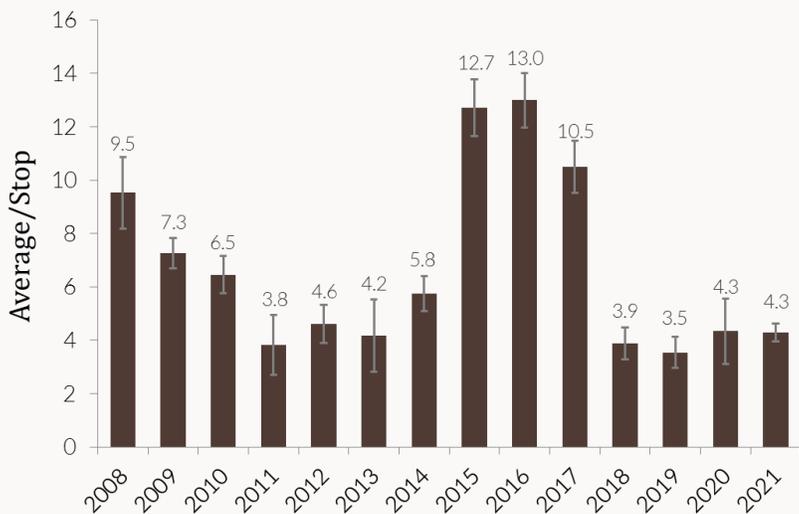
We conduct roadside counts annually in September during morning and evening, driving a 20 mile route across the Ranch. Roadside counts are one of the most accurate indices and are easily conducted by landowners.



* Scaled quail were reintroduced to the Research Ranch in 2013 and 2014. The population was supplemented with a small number of individuals in 2020.

SPRING CALL COUNTS

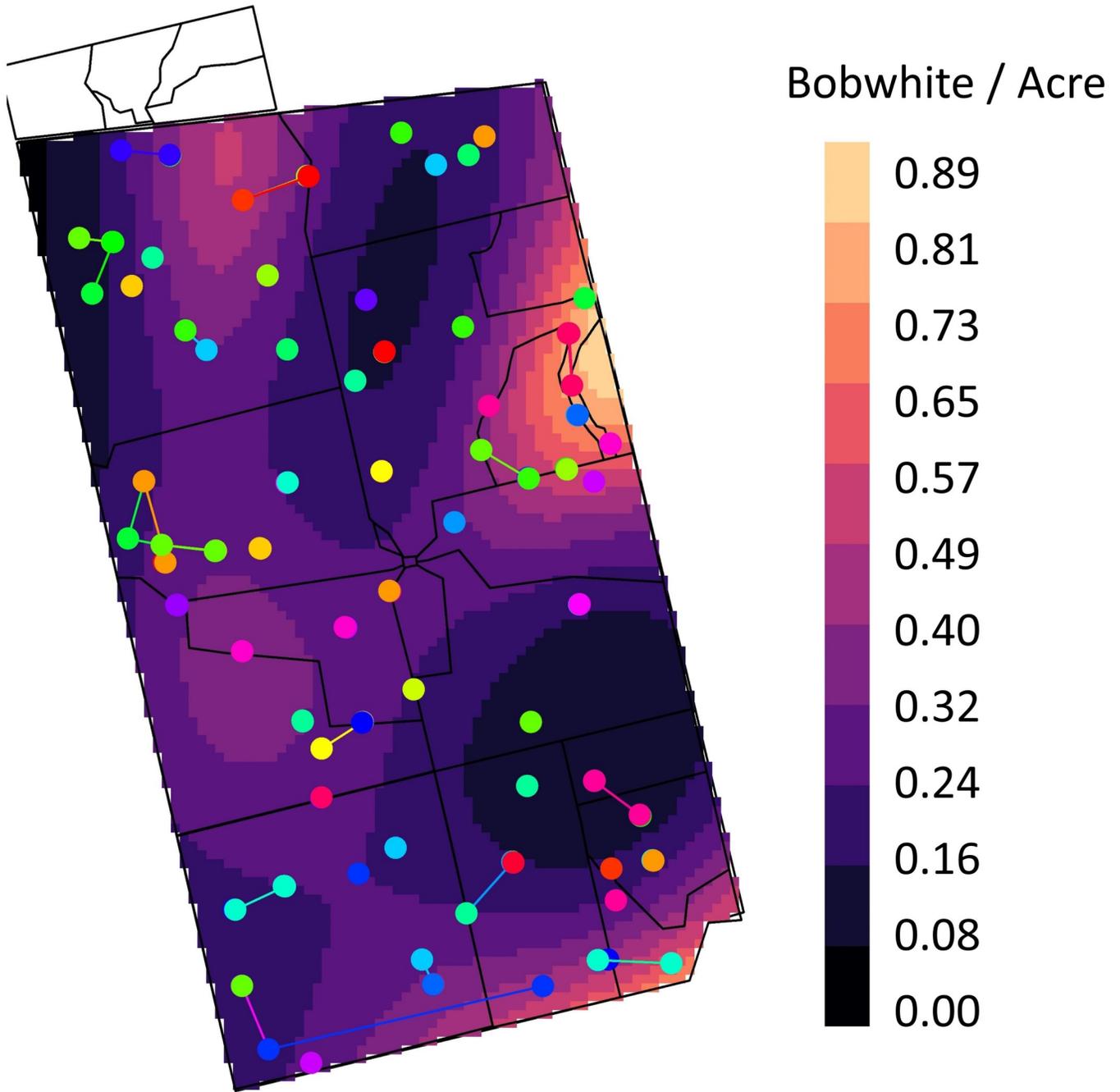
Spring calls are counted twice weekly from May-June at 25 points on the Ranch. An average of >7 bobwhite roosters per stop indicates high abundance, while counts averaging <3 bobwhite roosters per stop indicates low abundance. Scaled quail call counts are best used as an indication of presence/absence only due to low calling rates.



FALL COVEY CALL COUNTS

We count coveys in the fall during October by listening for the distinctive “Koi-lee” call of bobwhites at dawn. Covey call counts are a measure of covey density.

Joseph Richards



TRAPPING AND BANDING DATA

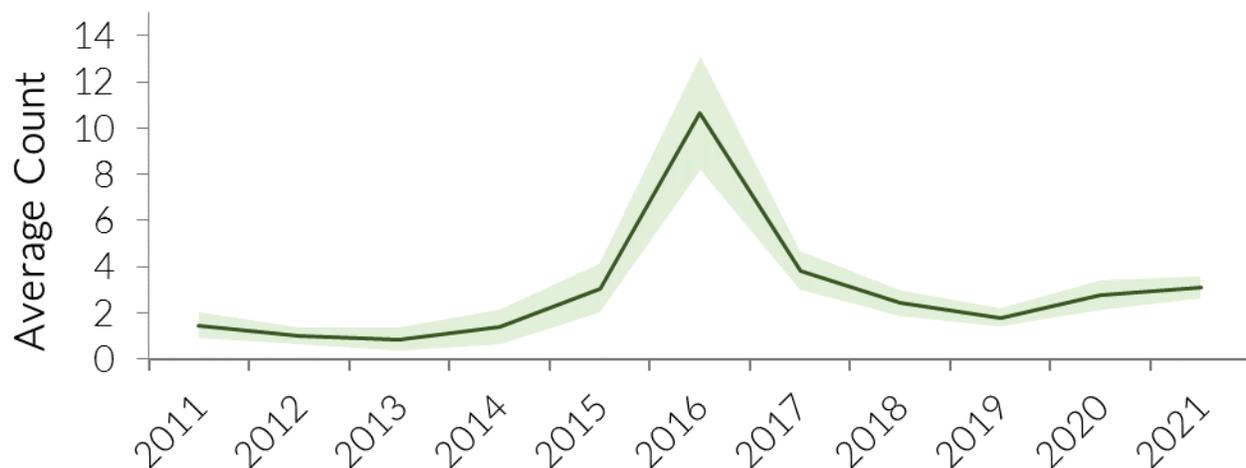
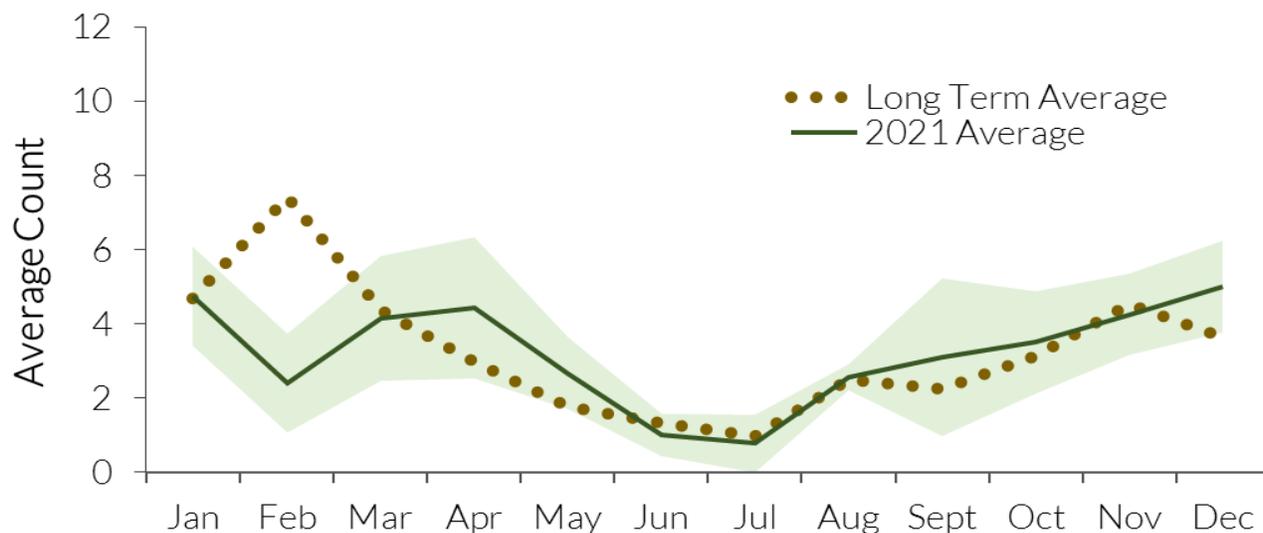
We intensively trap quail on the Research Ranch, twice annually to affix radio-collars to monitor survival and reproduction, estimate abundance, and evaluate annual production. The data presented here are density estimates of bobwhites on the ranch based on that trapping data. The circles represent locations where bobwhites were captured and the lines represent movement between successive recaptures.

RAPTORS

AT THE ROLLING PLAINS QUAIL RESEARCH RANCH

We conduct bi-weekly raptor counts on the Research Ranch. Raptors are important predators of quail and a major contributor to overwinter mortality. Much of that mortality occurs in the months just prior to breeding season when raptor abundance is at its peak in the Rolling Plains. Maintaining adequate herbaceous cover and managing for interspersed shrub cover is critical to protect quail over winter.

In 2021, we observed fewer than average raptors in February, but a prolonged peak through the month of April. Migration was likely impacted by late season snows.

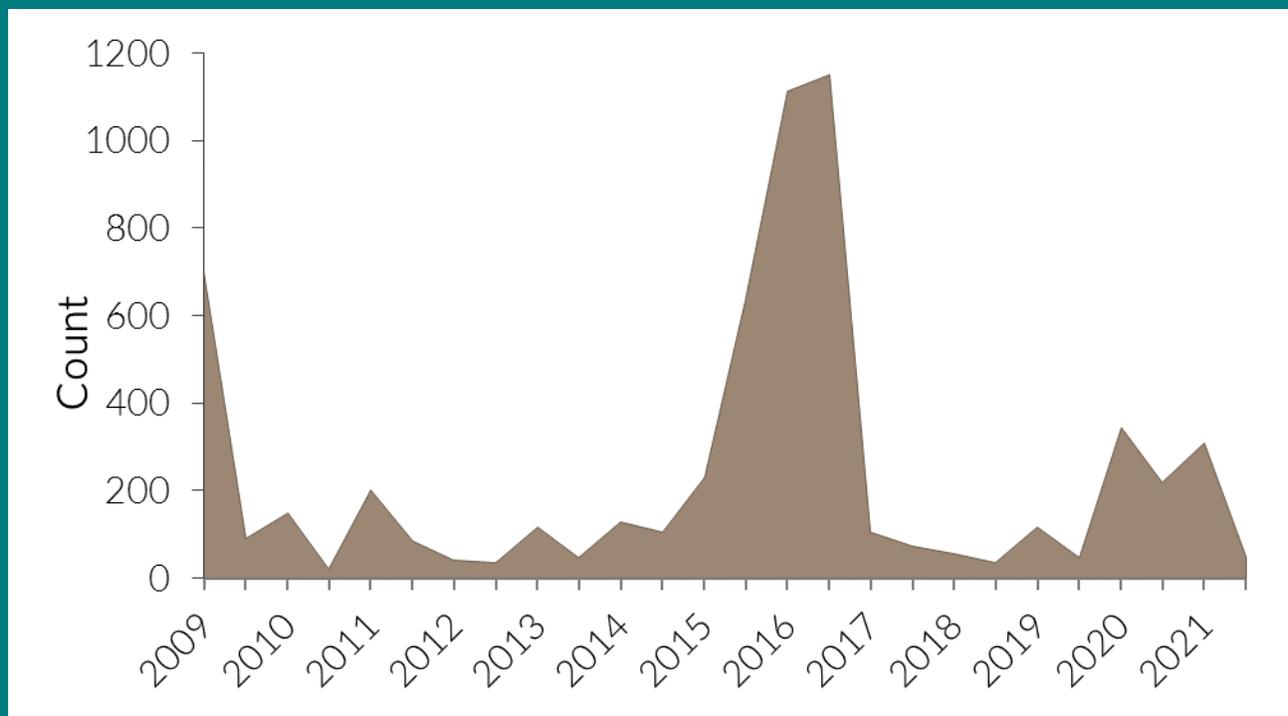


SMALL MAMMALS

AT THE ROLLING PLAINS QUAIL RESEARCH RANCH

Small mammals exhibit the same irruptive growth as quails and both communities appear to be driven by the same environmental factors. In fact, small mammal and bobwhite abundance are highly correlated. We monitor small mammals at the Research Ranch to learn more about the linkages with bobwhites. The small mammal community serves as an important buffer against predation on quails.

We trap small mammals in January and June using mark-recapture methods. The data presented here are an index of abundance.



DOUBLE T RESTORATION

AT THE ROLLING PLAINS QUAIL RESEARCH RANCH

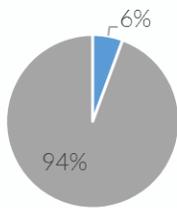
Our Research Ranch is comprised of 4,720 acres in the historic heart of West Texas quail hunting. For decades prior to RPQRF acquiring the property it was managed as a traditional cow-calf operation, as was much of the Rolling Plains. Management for quail really began in 2006 just prior to RPQRF being gifted the property. Since that time, nearly every acre of the property has been “touched” with varied levels of intensity with the goal of maximizing the amount and quality of quail habitat. However, an 80-acre pasture, called the Double T, was set aside to demonstrate a “do nothing” approach. As could be expected, succession pushed this pasture to a near closed-canopy, mesquite dominated landscape. The mesquite encroachment has suppressed much of the herbaceous diversity and production (likely through a combination of high water consumption, interception of sunlight, and promotion of desert termites). It was not considered habitable by our standards, and our trapping and telemetry data corroborated that assertion. We decided that needed to change.

In late 2021 the staff at the Research Ranch began working on a restoration of the Double T pasture. We chose to retain roughly 20 acres as a control and demonstration of no management. The other 60 acres were treated with mechanical removal of mesquite with the goal of reducing mesquite coverage by around 50 percent. A large frame skid-steer with a grubbing attachment was chosen as the optimal tool due to the relatively small acreage, relatively small target mesquite (<6” in diameter), and ability to sculpt the brush by selecting and removing individual plants. The grubber attachment allows us to dig down and pull the root ball of meristematic tissue. Without this, the mesquites would re-sprout from that tissue and eventually create an even denser stand. While our overall goal is to reduce this stand density, we aim to develop motts by leaving areas where mesquite is combined with other woody species to create a 20-30 meter area of dense cover where quail can escape predation and loaf when not foraging. We space these motts every 40-60 meters to ensure adequate cover over the landscape.

The reduction of mesquite in this pasture will dramatically decrease competition for sunlight and water among the plant community. In addition, the soil disturbance created from the skid-steers tracks should promote germination of valuable forb species and increase infiltration. Our hope is that the combination of these impacts will create a desirable mosaic of successional stages and bring these 60 acres from a 3 to an 8.

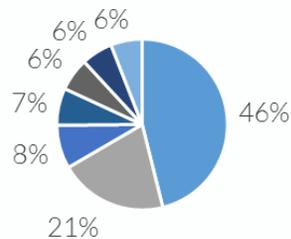


Total Non-Mesquite Shrub Cover



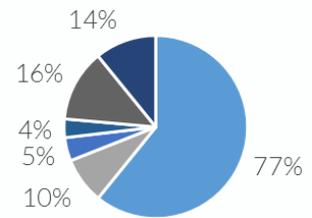
■ Shrub Cover ■ Open Ground

Relative Shrub Cover



■ Ephedra ■ Lotebush
 ■ Catclaw Acacia ■ Chittam
 ■ Tasajillo ■ Netleaf Hackberry
 ■ Other

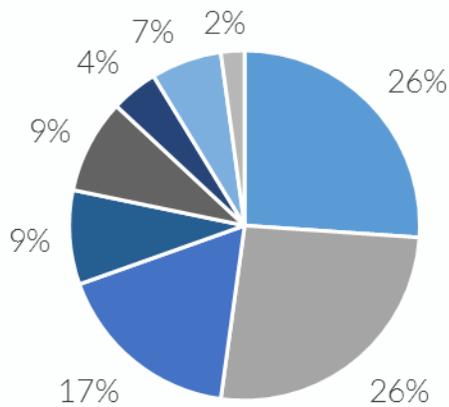
Herbaceous Cover



■ Bareground/Litter ■ Native Grass
 ■ Texas Wintergrass ■ Forbs
 ■ Brome spp. ■ Prickly Pear

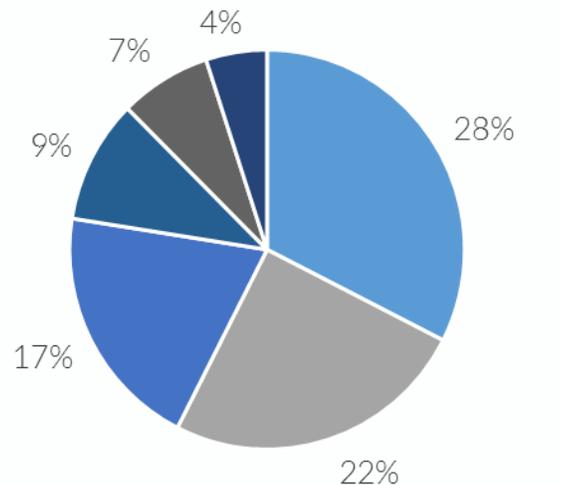
PERCENT GROUND COVER

Shrub Diversity



■ Ephedra ■ Lotebush
 ■ Tasajillo ■ Agarita
 ■ Catclaw Acacia ■ Chittam
 ■ Little Leaf Sumac ■ Netleaf Hackberry

Herbaceous Diversity



■ Field Ragweed ■ Plains Bristlegrass
 ■ Texas Wintergrass ■ Rescue Grass
 ■ Sand Dropseed ■ Silver Bluestem

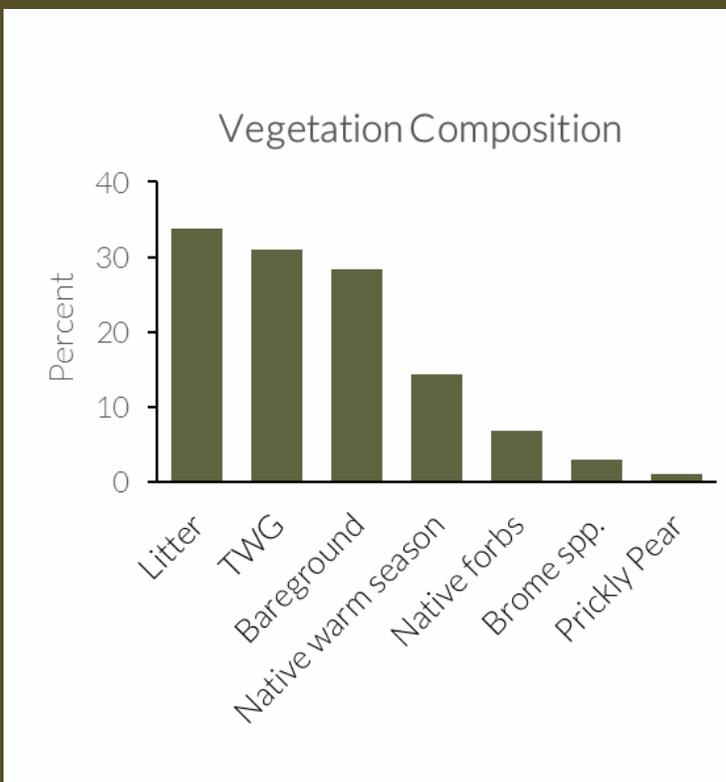
SPECIES DIVERSITY

We will monitor the response of the herbaceous and native shrub communities in the years following this restoration effort. The data presented here describe the baseline cover and species richness of these communities just prior to the restoration this year. Not surprisingly, we found that cover of native, non-mesquite shrubs (6%) is lower than ideal cover (~20%), that overall species diversity of forbs is low, and the percent of bare ground is high. Encouragingly, the diversity of native shrub cover is high.

TEXAS WINTERGRASS MITIGATION

AT THE ROLLING PLAINS QUAIL RESEARCH RANCH

Texas wintergrass dominates many plant communities across the Rolling Plains today despite being a minor component of grassland plant communities historically. The proliferation of wintergrass on the landscape is, in part, a remnant effect of mesquite encroachment. The shaded canopy of a dense mesquite forest favors cool season grasses because they are able to grow during the times of the year when mesquites are leafless. When warm season grasses peak in the summer, the mesquite canopy shades the understory limiting light availability. Legacy mono-cultures of wintergrass remain on the landscape even after mesquite removal, reducing plant diversity and bare ground. Changes in disturbance regimes such as fire and/or grazing at different times of the year have also contributed to these changes. This year we initiated a pilot study on the Research Ranch to build on previous research by testing the effectiveness of different applications of fire, herbicide, and re-seeding in reducing wintergrass stand density. We used an early fall burn (September) and will follow with treatments of herbicides and re-seeding. The herbicide treatments will compare the effectiveness of glyphosate and imazapyr. If these treatments prove effective at a small scale, we hope to expand to a full study with larger treatment areas in the future.





EFFICACY OF BROADCAST SUPPLEMENTAL FEED FOR NORTHERN BOBWHITES IN THE ROLLING PLAINS

Broadcast supplemental feeding is widely recognized as an indispensable management tool for boosting northern bobwhite abundance throughout the Southeast. When implemented at appropriate intensity, a supplemental feeding program benefits quail populations in many ways. Supplemental feeding ensures that food is not a limiting factor at all times of the year. Populations that receive supplemental feed have reduced home ranges, meaning that the birds do not have to venture as far to find food resources. As a result, birds have decreased exposure to predators. Secondarily, supplemental feed increases buffer prey species, which, in turn, reduces predation pressure on quail. Despite its widespread use in the Southeast, broadcast supplemental feeding has not yet been adopted on quail properties in the Rolling Plains in part due to the lack of research and demonstration that it can be effective in this area. In an arid environment, where natural food resources are arguably more limiting and energy demands are greater for quail populations, supplemental feed should have a greater impact on quail populations than they do in the Southeast. Preliminary research indicated that supplemental feeding in West Texas has demonstrable positive impacts on vital rates. However, these studies were limited in scope and did not measure quail or small mammal population response. As such, they have to date been unsuccessful in changing the management culture surrounding supplemental feed in West Texas. With this study, we seek to build on previous research and address unknowns regarding population response and the underlying mechanisms.

The goal of this project is to determine if supplemental feeding can boost quail demographics at any or all life stages and, ultimately, increase abundance. Furthermore, we intend to quantify the interaction between quail populations, buffer prey species community, and a supplemental feeding program. From a management perspective, our intent is to demonstrate an effective supplemental feed delivery system for land managers in the Rolling Plains, while quantifying costs, tradeoffs, and feed uptake.

We will collect a comprehensive dataset to meet these goals, including:

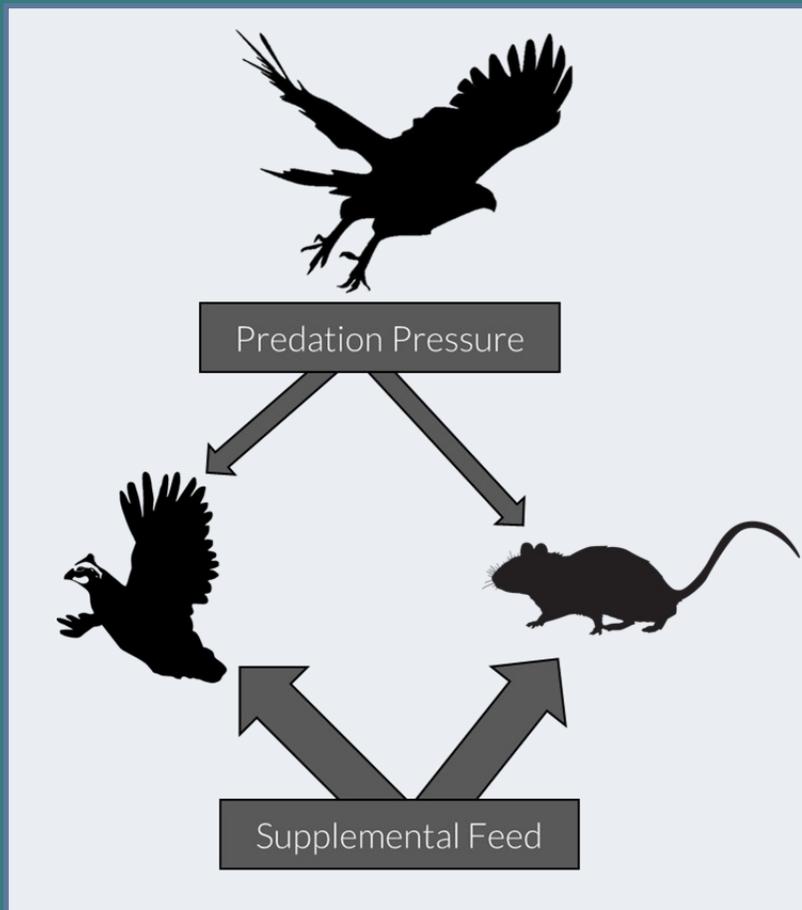
- 1) Bobwhite demographics (year round adult survival, nest initiation, nest success, and brood survival) in fed and non-fed pastures,
- 2) Bobwhite movement and selection of fed vs. non-fed pastures,
- 3) Bobwhite abundance of fed vs. non-fed pastures through bi-annual trapping and hunting success (i.e., coveys moved per hour),
- 4) Small mammal community dynamics,
- 5) Bobwhite feed utilization through dissected crops of hunted birds,
- 6) Feed disappearance rates on the landscape,
- 7) And, cost of program implementation.

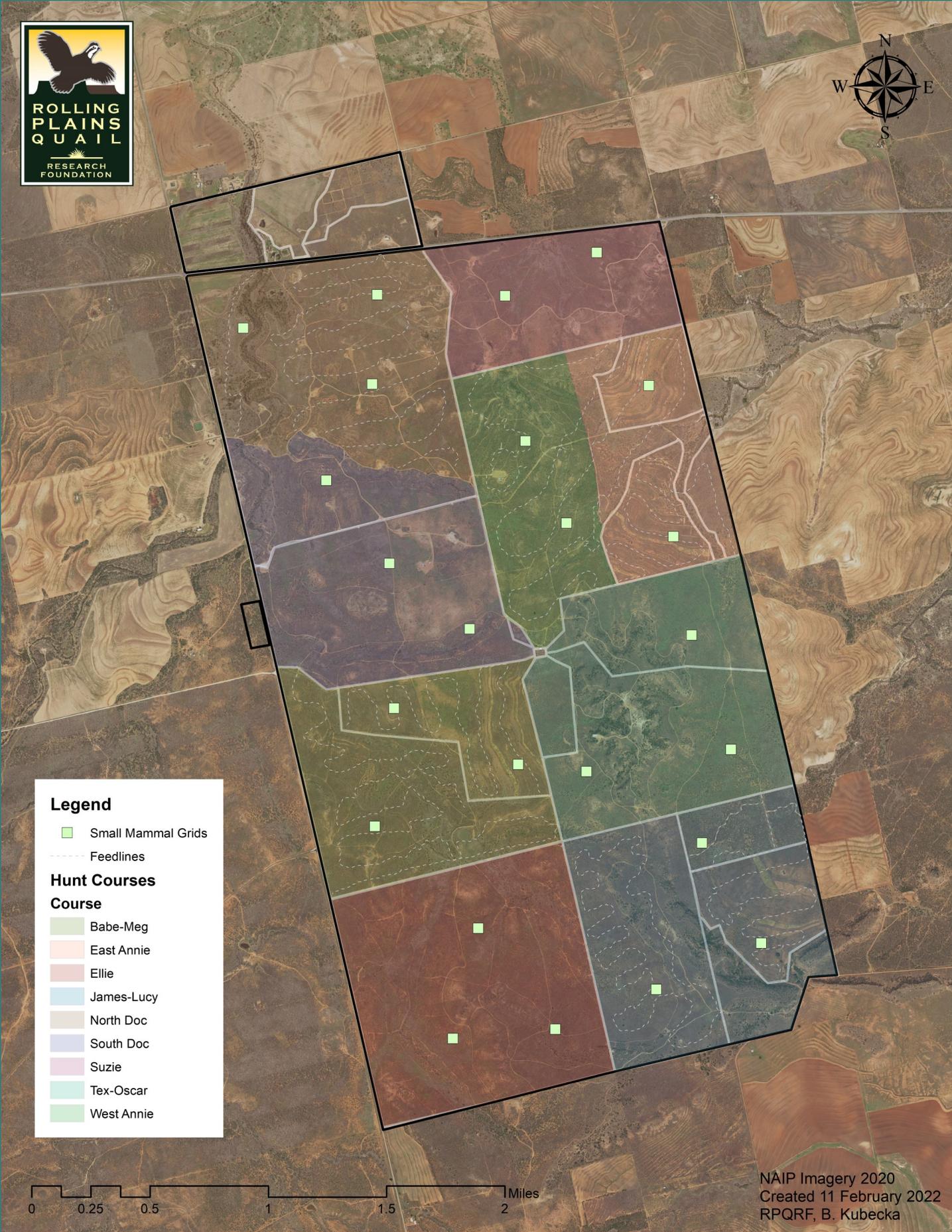


Feed will be distributed throughout the habitat every 2 weeks along 35 miles of feed-lines in the fed areas at a rate of 2 bushels/acre/year using this fertilizer spreader and a tractor.

We will monitor feed disappearance to inform an appropriate feed delivery schedule for the Rolling Plains.

After 18 months of feeding, we will swap fed and non-fed areas to measure impacts on both quail and small mammals.





Legend

- Small Mammal Grids
- Feedlines

Hunt Courses

Course

- Babe-Meg
- East Annie
- Ellie
- James-Lucy
- North Doc
- South Doc
- Suzie
- Tex-Oscar
- West Annie



NAIP Imagery 2020
Created 11 February 2022
RPQRF, B. Kubecka

QUANTIFYING CRIPPLING LOSS FOR HUNTED

NORTHERN BOBWHITES

During 2021, RPQRR initiated a multi-year and multi-faceted hunting study to gain information on encounter rates, hunt success, diets, quail abundance, and crippling loss. We established 9 hunt courses on RPQRR which overlap with supplemental feeding treatments and small mammal trapping grids. During hunts, tracks of dogs and hunters are collected using GPS while a technician monitors radio-marked coveys in the hunt course with VHF telemetry. The number of shots fired, number of wild flushes versus covey points, and other behavior or birds (run vs hold) are also recorded. We will use these data to evaluate hunt success (e.g., coveys seen per hour, percent pointed, etc.) in relation to management treatments, compare diets of quails in fed and non-fed pastures, and develop more-refined estimates of quail abundance on the Ranch. An overall average estimate of crippling loss is important to identify so that it may be included within a harvest prescription. To date, researchers have only inferred estimates of crippling loss based on anecdotal observation rather than empirical data from radio-marked birds. The crippling loss project is a collaborative study between Tall Timbers, Albany Quail Project, Central Florida Rangeland Quail Program, and the University of Georgia Gamebird and Managed Ecosystem Lab. The study is being carried out on 5 to 6 properties across the U. S. where over 650 radio-tagged birds will be monitored each hunting season.



VITAL RATES OF TWO SUBSPECIES OF TRANSLOCATED NORTHERN BOBWHITE

John Palarski, Brad Kubečka, Becky Ruzicka, and Dale Rollins

Rolling Plains Quail Research Foundation, Roby, TX

Heather Mathewson

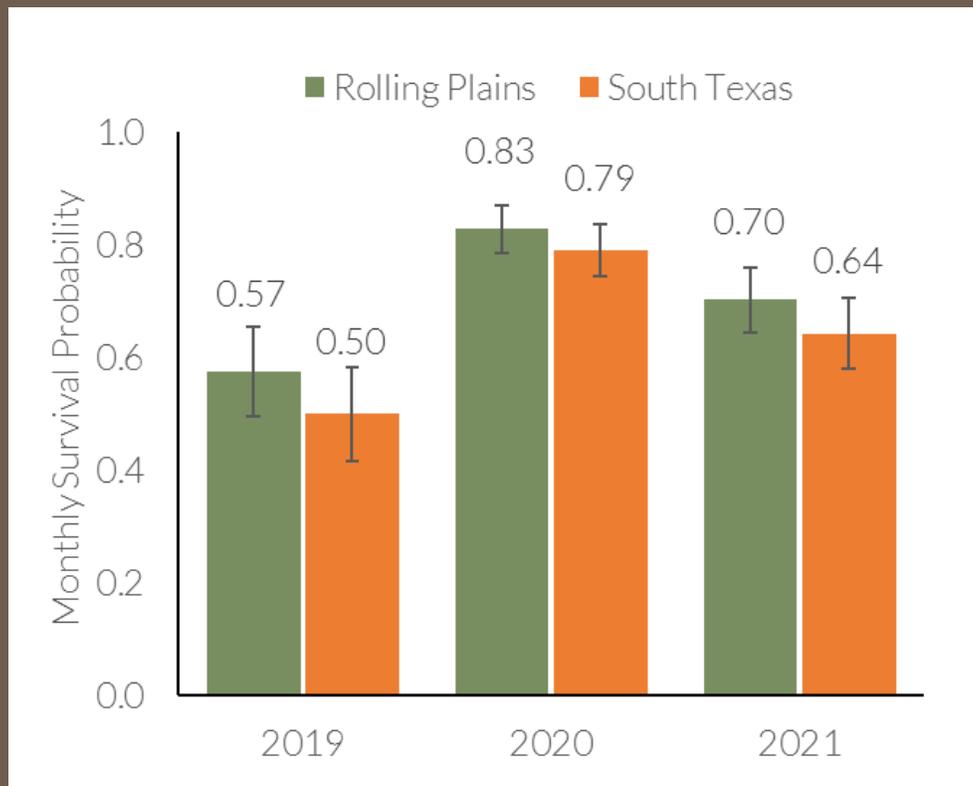
Tarleton State University, Stephenville, TX

Translocation of northern bobwhite (*Colinus virginianus*) can be an effective tool to rescue and reestablish populations. However, translocation of bobwhite presents unique logistical challenges. Bobwhite in Texas routinely experiences “boom” and “bust” years, meaning that populations vary greatly from year to year. In “bust” years, opportunities to conduct translocations across a wider geographic range are reduced. For instance, bobwhite populations in northwest Texas have been limited in recent years while populations in south Texas have remained strong. Instances such as this may preclude short-distance translocations and require translocation of individuals from distant source populations (>500 km) or different subspecies to that of the release site. To better understand how source populations effect translocated bobwhite demographics, we translocated individuals from two subspecies – *C. v. taylori* (northwest Texas) and *C. v. texanus* (south Texas) to a 1,100-ha site in northcentral Texas in March 2019-2021. The *C. v. taylori* subspecies geographic distribution includes northcentral Texas.

In total, we translocated 665 bobwhite ($n = 253$ northwest Texas and $n = 412$ south Texas) and radio-marked 380 individuals ($n = 184$ northwest Texas and $n = 196$ south Texas) in March 2019-2021. Beginning immediately after release, we monitored and tracked radiomarked bobwhite daily to evaluate survival, dispersal, and reproduction. We detected a difference in survival amongst years and between source populations. On average, radio-marked bobwhite from south Texas were 1.25 times more likely to die on the study site than bobwhite sourced from northwest Texas. Average monthly survival for both source populations was greatest in 2020 (NW = 0.83 ± 0.02 , and STX = 0.79 ± 0.02).

Individuals from northwest Texas were 1.5 times more likely to disperse off the study site. The farthest confirmed dispersal distance from the release point for an alive individual was 6.6 miles and occurred in 2021 by an adult male from south Texas. We also detected a difference in home range (95% KDE) between source populations. Home ranges were larger for bobwhite sourced from northwest Texas (126 ± 15 acres) compared to individuals from south Texas (79 ± 12 acres) ($W = 1694$, $P = 0.001$).

Hens from northwest Texas also had higher reproductive output than hens from south Texas (NW nests/hen = 0.83 ± 0.06 and STX nests/hen = 0.56 ± 0.09). We did not find evidence that source population influenced daily nest survival. Nests laid later in the nesting season had lower survival ($\beta_{\text{Time}} = -0.007$, 95% CL = $-0.015 - 0.001$).



Managers who wish to use non-native subspecies of bobwhite to supplement a translocation effort should be cognizant of the potential reductions in survival and reproduction that may occur. Replication of this study, as well as exploration into additional parameters such as overwinter survival and chick survival are warranted to better understand how differences between source populations may affect population recovery.

CENTRAL ROLLING PLAINS SCALED QUAIL RESTORATION

We launched the fourth iteration of RPQRF's scaled quail translocation research program in spring of 2021. The current project, located on the border of Kent and Fisher Counties, will build on previous research by further refining release strategy and impacts of source population, assessing habitat selection in the Rolling Plains, and implementing novel techniques for monitoring demographic rates. Past projects focused on basic feasibility (RPQRR), release strategies (Cottle and Knox Counties), and source populations (Knox County).

The release ranch is an approximately 25,000 acre property on the Double Mountain Fork of the Brazos River. The property is managed for a variety of wildlife species and primarily composed of the "red dirt" cedar brakes that characterize river drainages in the southern Rolling Plains. We focused on a smaller 2,500 acre parcel for releases. Past research indicates that brush encroachment by mesquite and cedar in the Rolling Plains has played a major role in reducing the quality of scaled quail habitat. Brush density on this site was reduced during an intense 2011 wildfire.

Throughout February and March our team alternated on-site telemetry monitoring and trapping at source sites in the Permian Basin and the northern panhandle. Hard release quail were released within 48 hours of capture. Soft release quail were placed in holding pens (i.e., Surrogators®) in a central location on the release site. These birds were released in early April. All hens were radio-collared and our team will be monitoring survival, dispersal, and reproduction throughout the breeding season.



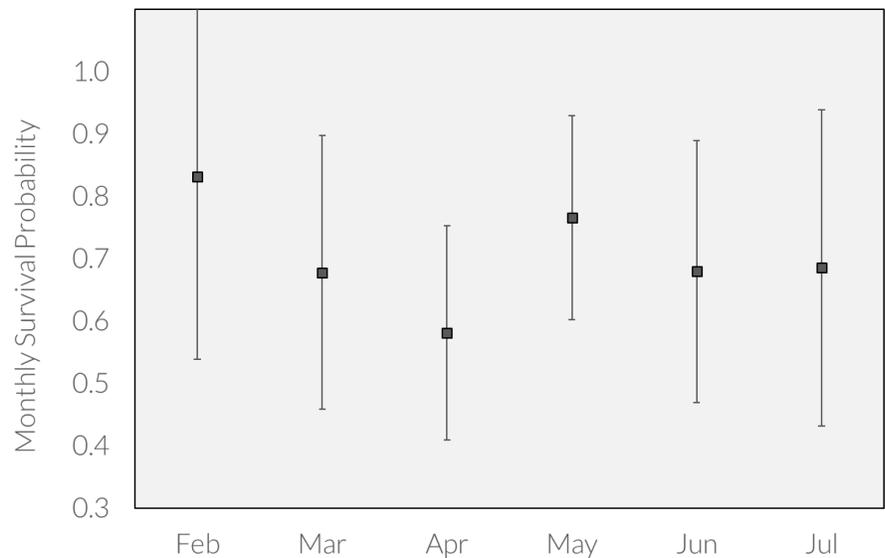
Survival of adult birds was low during the spring and early summer of this year. Ideally we would like to observe monthly survival probabilities above 0.88. However, monthly survival from February to May ranged from 0.58 – 0.83 (Figure 2). The months of March and April were particularly low. The primary source of mortalities during that time was raptors. Later in the season the primary source of mortality we transitioned to mammalian. We found no differences in survival by source population or release strategy in 2021; however, these data are preliminary.

Ample spring rainfall and the resulting flush of vegetation resulted in a strong nesting effort despite entering nesting season with low breeding capital. The 49 hens that entered breeding season on May 1st produced a total of 31 nests. Nine of 31 nests were second nesting attempts, after either failed or successful first nests. Clutch size averaged 11.5 eggs and ranged from 6 to 17 eggs which is typical of scaled quail. Nest success was 20%. Nest

predations were primarily attributed to meso-mammal predators. Subsequently, the ranch has implemented a predator management program to boost nest success and adult breeding season survival in the future. Scaled quail commonly nested at the base of shrubs and used a wide variety of nesting substrates. The most common substrates were red-berry juniper and ephedra. These shrubs are also common on the release site. Mesquite was not commonly used despite its high prevalence. Other nesting substrates including little leaf sumac, yucca, prickly pear, and little bluestem. We found no differences in nest initiation or success by source population or release.

Approximately 15% of radio-marked hens dispersed off property. That dispersal percentage compares favorably to what we have observed in other translocated scaled quail populations. We used aerial telemetry surveys to find missing birds twice during the summer. The longest distance dispersal we documented was 16 miles. Determining where hens disperse to is important for evaluating habitat selection strategy; however, these data are preliminary.

Moving forward, we will translocate and monitor birds for a second year in 2022.



Donor Recognition

ROLLING PLAINS QUAIL RESEARCH FOUNDATION

Covey Donors

GARY COONEY
RUSSELL GORDY

NEAL HAWKS
STEPHEN HOWARD

Brood Donors

STEPHEN B. SMITH

Chick Donors

BANK OF AMERICA
D. J. CRAINE
DOBSON RANCH
EAST TEXAS COMMUNITIES FOUNDATION
HOUSTON OUTFITTERS & SPORTSMAN GALLERY
LONE STAR OUTDOOR NEWS FOUNDATION
JOE CRAFTON

MARK MCCLELLAND
PERMIAN QUAIL COALITION, INC
THOMAS PREHN
RANDY ROGERS
BRIAN SMYTH
WILD WINGS RANCH

Nest Donors

BARRY BALLINGER
BENEVITY COMMUNITY IMPACT FUND
BILL AND SUSAN JOHNSON
CATHY KINCAID INTERIORS, LTD.
CHARLES A GRANSTAFF
CHARLES CADDELL
CHARLES GAINES
CORINNA HASKETT
DAVID OBERHOLZER
GARY SMITH
GLENN A. PICQUET
H. HOD AND WILLA KOSMAN
IVAN C. WHITT
JAMES CHEATHAM
JANNA BLANCHARD
JASON HUETTE
JERRY HAMON
JOE CALVERT
JOHN F PEREZ

KATHERINE DICKSON
KEITH BONDS
LINDSAY MINTER
LIVESTOCK WEEKLY
MARJORIE AND RON WOOD
MARK KEHOE
MARK MEADOWS
NETWORK FOR GOOD
O.W. STATELER JR.
RANDALL LUNZ
RANDY C. KUIPER
REBECCA CHESTER
RIGGS & WOOTAN, PC
SAM AND DARLENE BEAN
SCOTTIE VAUSE
TERRY HANCOCK
WESLEY CARTER
Z.L. STICK LAMAR II
ZACK BURKETT, III



PARK CITIES
QUAIL
COALITION

We would especially like to thank Park Cities Quail Coalition for their significant contributions to RPQRF since our inception. Over the past decade plus, PCQC has provided critical funding that has allowed our research efforts to flourish.

They are truly the wind beneath our wings.

Joseph Richards



Joseph Richards

Support Quail Conservation!

As a non-profit, RPQRF is dependent on the generous contributions of individuals, agencies, foundations, and corporations. These commitments are incredibly important for our research and scientifically sound management recommendations we provide for supporting wild quail populations. If you love these birds as much as we do, we hope you'll consider donating – no gift is too big or too small. And thankfully, there are more ways (and reasons) than ever to include RPQRF in your charitable donations.

Direct Donations: The Easiest Way to Give

Our website makes it easy to make an online donation and will even let you schedule monthly recurring gifts to support RPQRF on a year-round basis. If you'd rather mail your gift, you'll find the key details there, too. For more information, visit:
www.quailresearch.org/donate

RPQRF Endowment Series

Endowments are the lifeblood of many non-profit organizations with long-term visions. This year, RPQRF launched an inaugural endowment to support general operating expenses. RPQRF is also seeking endowment support to secure each of its organizational tenets: quail research, education, and outreach. Endowments are a great way to honor a donor, family member, or friend while ensuring our quail conservation efforts continue well into the future.

For more information on endowment opportunities, please contact RPQRF Executive Director, Brad Kubecka, bkubecka@quailresearch.org

Planned Gifts: Ensuring the Future of Quail Conservation

You can give the gift of quail conservation to future generations by including RPQRF in your estate plans. These gifts are not complicated (they can be completed in as little as one sentence) and will help ensure that we continue our mission for years to come. Click the button below to learn how to make a planned gift to RPQRF.

For more information, visit: www.quailresearch.org/planned-giving

The future we want requires action now.



