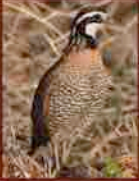




TEXAS A&M AGRILIFE EXTENSION TEXAS PARKS & WILDLIFE

# REVERSING THE DECLINE OF QUAIL IN TEXAS

## Texas Quail Index: Monitoring Bobwhite and Scaled Quail



**Becky Ruzicka, Extension Associate**  
Texas A&M AgriLife Extension Service  
Wildlife and Fisheries Sciences

[Becky.Ruzicka@tamu.edu](mailto:Becky.Ruzicka@tamu.edu)

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# REVERSING THE DECLINE OF QUAIL IN TEXAS

## Extension Programs

- Quail Appreciation Days
  - 2015 Dates – N. and S. TX



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## Extension Programs

### QuailMasters

- South Texas starting March 2015



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# REVERSING THE DECLINE OF QUAIL IN TEXAS

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## Texas Quail Index

- Monitoring quail populations statewide
- Increase the overall community involvement
- Give landowners tools to monitor



35 counties involved

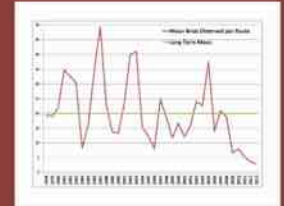
## Pop Quiz

A quail population the collection of individual quail that occupy:

- a) the state of Texas
- b) their entire range nationwide
- c) the ranch or property of interest
- d) all of the above

## Why would you want to monitor?

- Follow local population trends over time
- Assess the effectiveness of your management actions
- Make educated decisions on harvest
- Identify weak links



## Texas Quail Index Teams

- County Extension Agents
  - Landowner – Texas Master Naturalists
  - Former Brigaders - Former QuailMasters



## Assessing the Quail Equation

### Quail Abundance

- Spring Call Counts
- Roadside Counts
- Fall Covey Counts
- Harvest Index

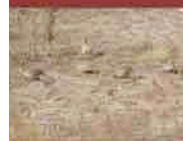
### Factors That Affect Quail Abundance

- Dummy Nests
- Predator Surveys
- Habitat Surveys
- Rainfall

## Activities Calendar

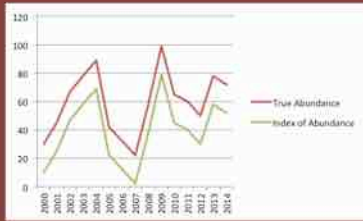


## Data Resolution

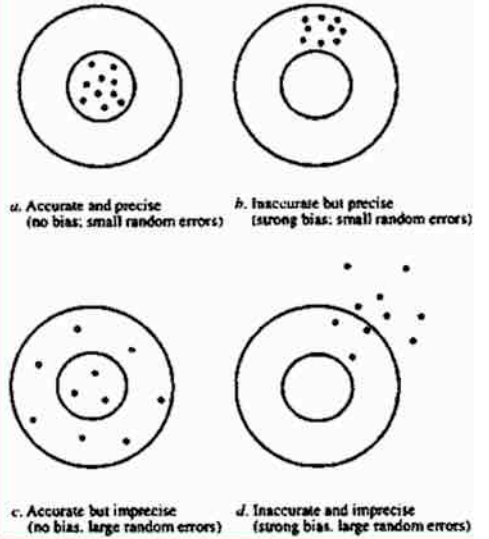


# Indices

- Estimate of the relative size of an animal population
- As population increases, index increases and vice versa



# Accuracy vs. Precision



# Setting Up the Transect

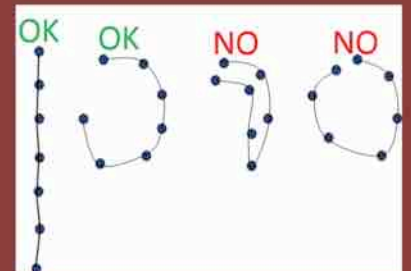
- Establish a permanent transect
- Serves as the “backbone” for all the data collection
- 7 miles long
- 8 stations



# Guidelines

- Every property will be slightly different
- Don't pick and choose spots

Make sure that the mile markers are separated by a mile IN ALL DIRECTIONS



# Guidelines

- Try to stay away from busy roads
- Avoid noisy oil field equipment



# Spring Call Counts

- Spring whistle counts
- Counting calling roosters
- A measure of a population's breeding potential and an index of relative abundance

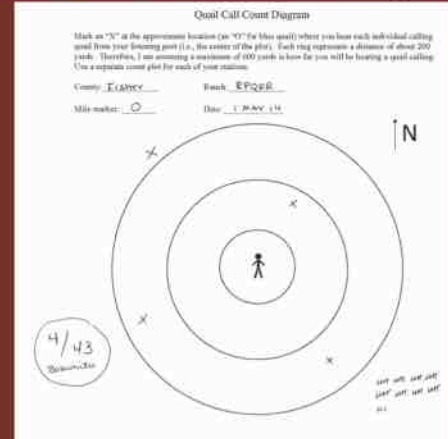


## Spring Call Count: Protocol

- Listen for 5 minutes each mile marker.
- Count all mile markers in a single morning
- Alternate your starting mile marker

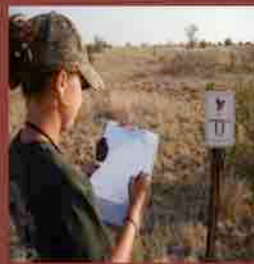


## Quail Call Count Diagram



## Fall Covey Call Counts

- Morning wake-up call
- Counting number of calling coveys
- Index of relative abundance



## Fall Call Count Protocol

- Bobwhite quail only
- Covey Call Counts
- Can only count mile marker per listener per day

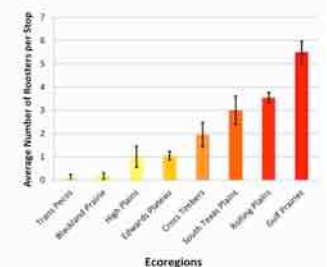
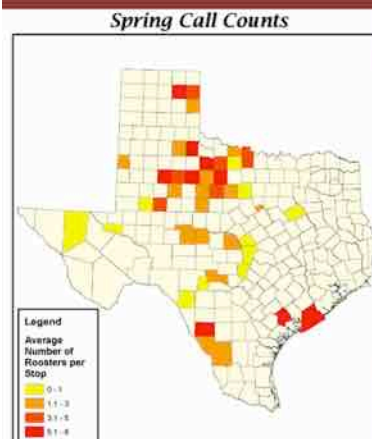


## Call Count Caveats

- Do not count if it is raining, windy above 10 mph, or past 9 am
- Recruit someone with good hearing!



## 2014 Results



## Review Question

During spring call counts, what segment of the quail population are we counting?

- a) All females
- b) All males
- c) Calling males
- d) Calling males and females

## Review Question

During fall call counts, what species of quail are we monitoring?

- a) Scaled Quail
- b) Bobwhite Quail
- c) Bobwhite and scaled quail
- d) Any species of quail

## Dummy Nests

- Using chicken eggs to simulate quail nest
- Most time and labor intensive task
- Learning about nesting habitat



## Dummy Nests

- Estimating number of suitable nesting clumps per acre



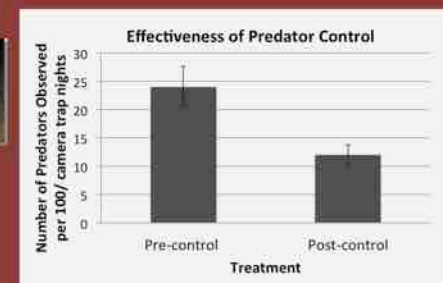
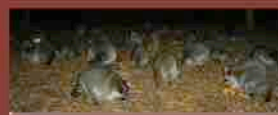
## Pop Quiz

Which one of these does NOT make suitable nesting cover for quail?

- a) Basketball sized bunchgrass
- b) Hula hoop sized prickly pear
- c) Dense low growing brush
- d) Yucca with dead leaves at the base

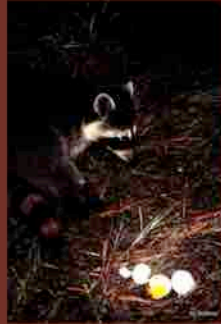
## Predator Surveys

- Game cameras
- Indices of predator abundance



## Why is predator monitoring important?

- Nest predation is the primary cause of nest failure in quail.
- In most areas, mesomammal predators (e.g. skunks, raccoons, opossums) account for a majority of nest depredations.



## What kind of camera?



## Camera Placement

- Set-up cameras along roads
  - Roads are often used travel paths for predators
  - Provide a clear field of view



## Camera Placement

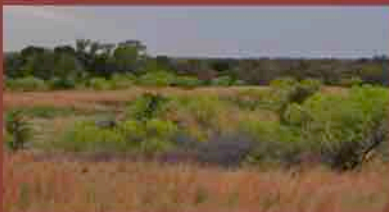
Remove vegetation from in front of camera

Vegetation will block your view of the subject



## Habitat Evaluations

- Rate the habitat along the route
- Use habitat score to compare to estimates of relative abundance
- There's an app for that!



## Habitat Evaluations

### Bobwhite Quail Habitat Evaluation

The sprouting quail manager must be able to visually assess the suitability of a given piece of land as quail habitat. The things that must be evaluated include:

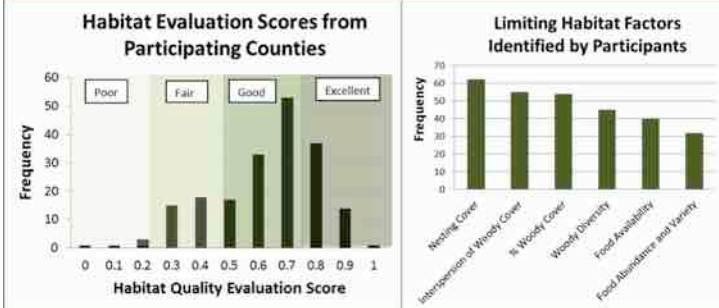
- Nesting Cover** - Quail need nesting cover consisting of large bunch grass clumps about the size of a basketball or prickly pear cactus of least 3 feet wide (the size of a hole hoop). A minimum of 2,500 large bunch grass clumps is recommended for ideal nesting cover.
- Woody Cover** - Protective cover of brush and shrubs that are thick enough to conceal quail from raptors and low enough to the ground to give thermal and visual protection, or about 10 feet in diameter and 3 feet high. Brush cover should occur in crisscrossed filices across the landscape, at the least, you should be able to throw a softball in the air from one suitable brush clump to the next.
- Food** - Habitat that provides a stable and reliable food supply will have a variety of both desirable forbs and grasses that produce seed for quail, most producing brack cones, lamb's ears, blackberry, etc.) and insects. Remember that plant diversity translates into insect diversity and that insects are the "perfect" quail food (especially for broods). A quail needs about 0.07 lb. of food per day.
- Water** - Quail do not necessarily need to have access to permanent water, but access to a pond or habitat evaluation.
- Interpretation** - Quail need a "spray quail" arrangement of various habitat needs, because they don't have the ability to fly distances on the landscape. Everything a quail needs on a daily basis should be within about 25 acres.

Rate each category between 0.0 (Poor) to 1.0 (Excellent)

<b>Nesting Cover</b> - What percentage of area supports suitable brush grass clumps of basketball size, prickly pear or cactus of least three feet across, or other suitable nesting sites?	
<b>Woody Cover</b> - What percentage of area is low brush that can provide effective thermal and visual cover for the quail?	1.00
<b>Area of cover</b> - 25% to 40%	0.87
<b>Area of cover</b> - Less than 5% or greater than 40%	0.25
<b>Food</b> - Evaluate the abundance, variety and availability of desirable forbs and browse and large seeded grasses. (See notes on Abundance & Variety)	
<b>At least 5 species from list are present and available and well distributed across general area</b>	1.00
<b>At least 3 species from list are present, but distribution and availability may be limited</b>	0.67
<b>Plants from list are present, but available or poorly distributed across general area</b>	0.33
<b>No species beneficial to the quail are available in the general area</b>	0.00
<b>Availability</b>	
<b>Food is available approximately every 3 square yards (1 yd x 1 yd). Insects abundant during summer</b>	1.00
<b>Food is available at least every 4 square yards (2 yd x 2 yd). Insects common during summer</b>	0.67
<b>Food is available at least every 16 square yards (4 yd x 4 yd). Insects sparse during summer</b>	0.33

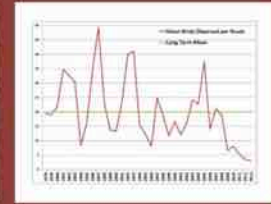


## Habitat Evaluations



## Roadside Counts

- Simplest of the tasks
- Counting quail seen on route during dusk and dawn hours
- Comparable to TPWD's annual counts

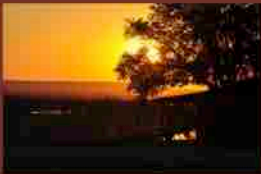


Bobwhite counts from the Rolling Plains

## Roadside Counts

- Drive the route
  - 2 hours after sunrise
  - 2 hours before sunset
- <20 mph

Ideal route is 20 miles or more



## Roadside Count Datasheet

**Roadside Count Data Sheet**  
Texas Quail Index

Cooperator: SPARR County: Fisher Observer: Reizica

Date: 1 Sept 14 Count No. 1 Quail species (circle): Bobwhites  Blues

Time start: 0730 Time end: 0750 Weather: CLEAR, BREEZY

Distance	Quail observed			Comments
	Singles	Pairs	Coveys	
example		2	(12)	1 pr blue, 13 bobs about 1/4 grown
0.5 mi	0	0	(0)	1 covey bobs, 8 birds
2.3 mi	1	0	0	
3.8 mi	0	2	0	1 pair bobs
5.7 mi	0	0	(12)	1 covey blues, 12 birds
7.6 mi	0	0	(6)	1 covey bobs, 6 birds
7.8 mi	0	2	0	1 pair bobs

## Harvest Index

- Quail harvested/per unit effort
- Unit effort: hours hunted, number of dogs, and number of hunters in party



## Harvest Index

- Use ratio of juveniles:adults to assess production for the year
- Rule of thumb: 3:1

Look at the primary covert feathers on the top of wing



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Questions?

[Becky.Ruzicka@tamu.edu](mailto:Becky.Ruzicka@tamu.edu)