

# Northern Bobwhite and Scaled Quail Response to Environmental Quality Incentives Program Practices in the Shortgrass Prairie Bird Conservation Region



ERIC D. ABERCROMBIE

Department of Range, Wildlife, and Fisheries Management, Texas Tech University, Lubbock, TX 79409, USA

C. BRAD DABBERT

Department of Range, Wildlife, and Fisheries Management, Texas Tech University, Lubbock, TX 79509, USA

## Introduction:

- Northern bobwhite have been on a decline since the early 90's for the Shortgrass Prairie Bird Conservation Region (TBCR18).
- The Northern Bobwhite Conservation Initiative (NBCI) seeks to reverse bobwhite declines.
- Rangeland provides the most potential for adding usable habitat to TBCR18.
- Brush encroachment and overgrazing have rendered much of this rangeland unusable.
- The Environmental Quality Incentives Program (EQIP) may provide a solution for restoration.

## Environmental Quality Incentives Program:

- EQIP practices in TBCR18:
  - Upland wildlife habitat management
  - Prescribed grazing
  - Brush management
- Target species:
  - Lesser prairie-chicken
  - Black-tailed prairie-dog
- Non-target species:
  - Northern bobwhite
  - Scaled quail



## Study Objectives:

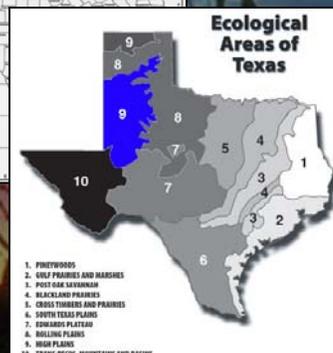
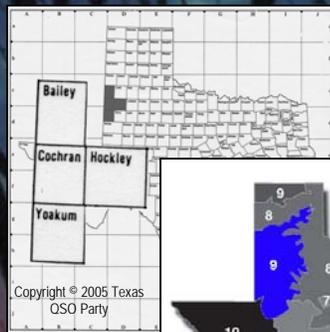
- Assess population response of both bobwhite and scaled quail to EQIP practices and determine habitat variables that have the greatest influence on quail populations in TBCR18.

## Study Area:

- Located in the Southern High Plains of Texas
- Avg. precipitation = 45 cm
- Many sites dominated by sand shinnery oak and/or honey mesquite.
- A few sites dominated by sumac and yucca.
- Soils range from deep, fine sand to clay loam.

## Site Selection:

- EQIP enrolled land
- 8 study sites
- 5 brush, 3 graze
- Selected paired controls for each site
- Paired T-test to compare differences in population size between pairs

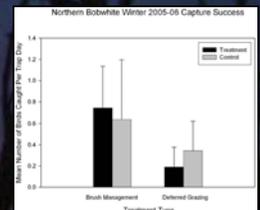
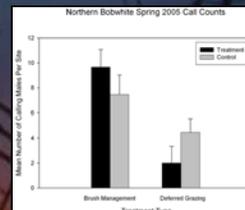


- October to December
- Same permanent call stations
- 3 replicates per site
- ~ 30 minutes before sunrise
- Population Estimation
  - Mark-Recapture
    - October to December
    - Collapsible funnel-trap (Smith et al. 1981)
    - Baited with cracked corn and milo
    - 25 traps per treatment on a grid, centered around call stations
    - 2 sessions per day for 6 days per site = 150 trap days
    - Double-band legs
- Vegetation Sampling
  - Step point counts
  - Visual obstruction



## Preliminary Results:

- 2005 Spring Call Counts
  - Bobwhite
    - Brush Management - No Effect ( $P = 0.224$ )
    - Prescribed Grazing - Controls > Treatments ( $P = 0.074$ )
  - Scaled Quail
    - Brush Management - No Effect ( $P = 0.908$ )
    - Prescribed Grazing - No Effect ( $P = 0.979$ )
- 2005 Mark Recapture
  - Bobwhite
    - Brush Management - No Effect ( $P = 0.814$ )
    - Prescribed Grazing - No Effect ( $P = 0.255$ )



## Discussion:

- 2005 – “Boom year” for quail in High Plains— possible reason for no detection of difference between sites.
  - Prescribed Grazing:
    - EQIP enrolled sites were heavily grazed prior to enrollment.
  - Brush Management:
    - Treatments applied at varying times and may be too early to detect the effects.
- Another year or two should provide more informative data to make valid inference from.



## Upland Wildlife Habitat Management:

- Implemented to create, maintain, or enhance areas of food and cover for upland wildlife.
- The purpose of this practice is to maintain or increase populations of target and non-target wildlife species.

## Prescribed Grazing:

- Implemented to control duration, intensity, and frequency of grazing.
- Should help restore rangeland to a higher range condition class.
- Thus, may provide quail with proper nesting cover during the breeding season, if residual cover is maintained.

## Brush Management:

- Implemented to remove target woody vegetation using chemical, biological, and/or mechanical methods.
- Should reduce woody vegetative encroachment.
- Thus, may increase warm-season grass and forb yields for increased nesting cover and food availability.

## Methods:

- Index Relative Abundance
  - Spring whistle call counts
    - May and June
    - Permanent call stations
    - 3 replicates per site
    - 30 minutes before sunrise until 1 hour after sunrise
  - Fall covey call counts