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

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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

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.

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

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
- 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.