INTRODUCTION

The lesser prairie-chicken (Tympanuchus pallidicinctus) is an iconic endemic species of the North American Great Plains.

- Currently only occupy < 10% of their historic range
- Suffered severe population declines

Intensive management actions are required to manage the habitat for the lesser prairie-chicken.

- Row-crop agricultural expansion
- Continuous livestock grazing
- Fire suppression
- Invasive species encroachment
- Urban expansion
- Severe drought
- Wind energy development
- Hydrocarbon exploration

Dominant vegetation includes:

- Sand shinnery oaks
- Sand sage brush (Artemisia filifolia)
- Mixed grass assemblages
- Short grass assemblages

Methods

Prescribed Burn Treatments

The study area is divided into 5 fire treatments:

- 1 unburned and 4 prescribed burn units, spring burn 2016-2020
- Pre-fire, 2016, and 2017 data previously collected by NMSU

Grazing Treatments

Area will be divided into 2 large grazing units:

- Area will be subjected to a high intensity, low duration grazing in 2020
- 70% standing herbaceous biomass reduction

Nesting Success And Habitat Selection

Capture lesser prairie-chickens on spring leks using walk-in funnel traps and drop-nets

Females

- Measure and record morphometrics
- Band with color and aluminum bands
- Outfit with 22g GPS PTT

Males

- Measure and record morphometrics
- Band males using plastic color bands
- Collect tissue for parasitology and genetic analysis

Nests

Will be monitored to determine success (> 1 egg hatching)

Vegetation And Invertebrate Response

Response to prescribed fire and grazing regimes will be quantified using:

- Visual obstruction
- Percent cover estimations
- Plant community composition
- Invertebrate assemblage and biomass

Herd Health And Production

Monitor and quantify:

- Cattle body condition
- Availability and Forage quality selection
- Supplemental feeding rates/ratios
- Estimate production

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