

2017

Evaluation of Land Restoration Practices on Northern Bobwhite Productivity in North-Central Texas: Preliminary Results

Danielle Belleny
Tarleton State University

Heather Mathewson
Tarleton State University

Jeff Breeden
Tarleton State University

John Tomeček
Texas A&M AgriLife Extension

T. Wayne Schwertner
Tarleton State University

See next page for additional authors

Follow this and additional works at: <https://trace.tennessee.edu/nqsp>



Part of the [Natural Resources and Conservation Commons](#)

Recommended Citation

Belleny, Danielle; Mathewson, Heather; Breeden, Jeff; Tomeček, John; Schwertner, T. Wayne; and Giacomo, James (2017) "Evaluation of Land Restoration Practices on Northern Bobwhite Productivity in North-Central Texas: Preliminary Results," *National Quail Symposium Proceedings*: Vol. 8 , Article 66.

Available at: <https://trace.tennessee.edu/nqsp/vol8/iss1/66>

This Bobwhite Population Ecology and Behavior is brought to you for free and open access by Volunteer, Open Access, Library Journals (VOL Journals), published in partnership with The University of Tennessee (UT) University Libraries. This article has been accepted for inclusion in National Quail Symposium Proceedings by an authorized editor. For more information, please visit <https://trace.tennessee.edu/nqsp>.

Evaluation of Land Restoration Practices on Northern Bobwhite Productivity in North-Central Texas: Preliminary Results

Authors

Danielle Belleny, Heather Mathewson, Jeff Breeden, John Tomeček, T. Wayne Schwertner, and James Giocomo

EVALUATION OF LAND RESTORATION PRACTICES ON NORTHERN BOBWHITE PRODUCTIVITY IN NORTH-CENTRAL TEXAS—PRELIMINARY RESULTS

Danielle Belleny¹

Department of Wildlife, Sustainability, and Ecosystem Sciences, Tarleton State University, Box T-0050, Stephenville, TX 76402, USA

Heather Mathewson

Department of Wildlife, Sustainability, and Ecosystem Sciences, Tarleton State University, Box T-0050, Stephenville, TX 76402, USA

Jeff Breeden

Department of Wildlife, Sustainability, and Ecosystem Sciences, Tarleton State University, Box T-0050, Stephenville, TX 76402, USA

John Tomeček

Department of Wildlife & Fisheries, Texas A&M AgriLife Extension, 7887 U.S. Highway 87 North, San Angelo, TX 76901, USA

T. Wayne Schwertner

Department of Wildlife, Sustainability, and Ecosystem Sciences, Tarleton State University, Box T-0050, Stephenville, TX 76402, USA

Jim Giocomo

Oaks and Prairies Joint Venture, American Bird Conservancy, 4249 Loudoun Ave, The Plains, VA 20198, USA

ABSTRACT

The decades long decline in grassland avian populations is ultimately attributed to changing land use throughout the United States. Due to their economic importance and status as a healthy grassland indicator species, attention focused towards land management for northern bobwhite (*Colinus virginianus*) benefits other grassland vertebrate and invertebrate species. Land restoration practices offer opportunities to mitigate the declines in northern bobwhite populations. While several studies focus on restoring land for northern bobwhite, this study addressed the effectiveness of such restoration practices. We radio-marked female bobwhite from April to July 2016 and located the birds every three to five days to gather land use information at female diurnal locations. We also placed infrared, time-lapse video cameras within 5m of a nesting site in addition to daily nest checks to identify potential nest predators. We measured vegetation characteristics including visual obstruction, herbaceous, grass, litter, woody material, and canopy ground cover at each nest site and female diurnal location. We built nest survival models using AICc model selection to determine the influence of vegetation characteristics and camera. Of the 31 captured birds, 12 attempted nesting, resulting in four successful nests. We calculated that the nests have a 95% chance of survival the day after and a 32% chance of overall success. Our AICc models found no interactions among nest success and vegetation characteristics. Following nest termination of successful broods, all four broods were abandoned. Two females were radio-marked during their brood-rearing period and both broods lasted longer than 30 days of dependence. We compared the means of vegetation measurements of female diurnal locations between treated and non-treated areas and found no significant differences ($p > 0.05$). Further assessments of breeding success between treated and non-treated areas are needed to better understand the effects of restoration practices.

Citation: Belleny, D., H. Mathewson, J. Breeden, J. Tomeček, T. W. Schwertner, and J. Giocomo. 2017. Evaluation of land restoration practices on northern bobwhite productivity in Northcentral Texas—Preliminary results. National Quail Symposium Proceedings 8:240.

Key words: northern bobwhite, *Colinus virginianus*, land restoration, nest success, brood-rearing, Rolling Plains, north-central Texas

¹ Email: danielle.belleny@go.tarleton.edu