ABSTRACT INSTRUCTIONS

Follow the example below per these instructions:

1. Times New Roman 12 pt font; 1 inch margins; single space abstract.
2. Limit title to 255 characters.   Do not include scientific names in the title. Do not abbreviate place names (e.g., state or country) in the title.
3. List authors, affiliations and addresses; if there is >1 author, underline presenting author; provide email address and phone number for corresponding author.
4. After author information, designate (bold, underlined) whether you want your submission to be considered as: **full paper only**; **prefer full paper, but will consider oral paper or poster**; **oral paper only**; **poster**.
5. Abstract is limited to 300 words, and should include a statement of objectives, brief description of methods, principal results and conclusions.
6. Include scientific names, *italicized*, in the abstract and keywords.   Do not include title or author information in the abstract.
7. After the abstract paragraph, place >5 key words flush left with the left margin.

Impact of Experimental Habitat Manipulation on Northern Bobwhite Survival

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ABSTRACT: Habitat management for northern bobwhite (*Colinus virginianus*) should affect vital rates, but direct linkages with survival are not well documented; therefore, we implemented an experiment to evaluate those responses. We conducted our experiment on a reclaimed surface mine, a novel landscape where conditions were considered sub-optimal because of the dominance of non-native vegetation, such as sericea lespedeza (*Lespedeza cuneata*), which has been reported to provide marginal habitat for northern bobwhite and may negatively affect survival. Nonetheless, these areas have great potential for contributing to bobwhite conservation because of the amount of early successional cover they provide. Our study site, a 3,330-ha reclaimed surface mine in western Kentucky, consisted of 2 tracts (Sinclair and Ken, 1,471 ha and 1,853 ha, respectively) that served as replicates with each randomly divided into a treatment (i.e., habitat manipulation through a combination of disking, burning, and herbicide application) and an undisturbed control ($n = 4$ experimental units). Habitat treatments were applied October 2009 to September 2013. We used radio telemetry to monitor northern bobwhite ($n = 1,198$) during summer (1 Apr−30 Sep) and winter (1 Oct−31 Mar), 2009−2013. We used the known-fate model in Program MARK to evaluate treatment effects on seasonal survival rates. We included

biological, home-range, landscape, and microhabitat metrics as covariates to help improve model sensitivity and further elucidate experimental impacts.   Survival varied annually, ranging from 0.139 (SE = 0.031) to 0.301 (SE = 0.032), and seasonally (summer, 0.148 [SE = 0.015]; winter, 0.281 [SE = 0.022]).   We found a treatment effect (β = 0.256, 95% CI = 0.057–0.456) with a seasonal interaction (β = -0.598, 95% CI = -0.898 to -0.298) with survival being higher in summer (0.179 [SE = 0.022] vs. 0.109 [SE = 0.019]) and lower in winter (0.233 [SE = 0.025] vs. 0.355 [SE = 0.035]) on treatment than control units.   Among habitat covariates, litter depth (β = -0.387, 95% CI = -0.5809 to -0.1930) was the most influential effect (negative) on survival.   Additional experiments across a wider range of habitat conditions may be required to determine management intensity or duration thresholds required to elicit greater changes in survival for northern bobwhite populations.