

Bobwhite Nesting and Brood Rearing Habitat Use in Response to Habitat

Restoration Efforts in Arkansas

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Hiding bobwhite chick



Searcy County Landscape



Fulton County Landscape

Bobwhite nest woven from grass litter



Introduction

A landscape-scale habitat restoration plan was implemented in Arkansas to increase brood rearing and nesting habitat

Our objectives were to:

1. Evaluate habitat used by brood rearing and nesting bobwhites.
2. Determine whether management activities produced habitat favorable for nesting and brood rearing activities.

Methods



We captured bobwhites in two focal areas and monitored them with radio telemetry for nesting and brood rearing activities. We sampled vegetations within a 1 m² frame.

We used a discriminant function to evaluate five habitat classes: nest locations, brood habitat in restored areas, brood habitat in unmanaged areas, randomly selected habitat in restored areas, and randomly selected unmanaged areas.

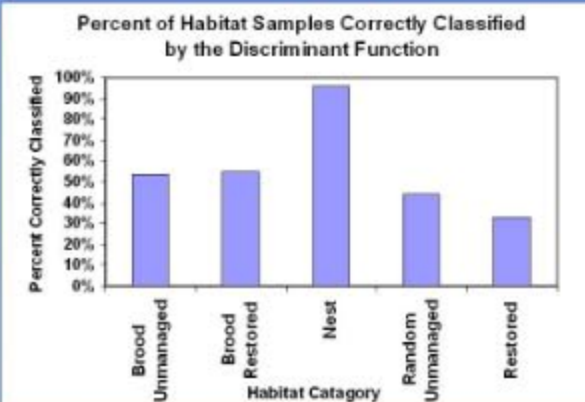


Figure 1 Percent of correctly classified habitat in each habitat class. The model correctly classified 69% of brood habitat when brood restored and unmanaged were pooled.

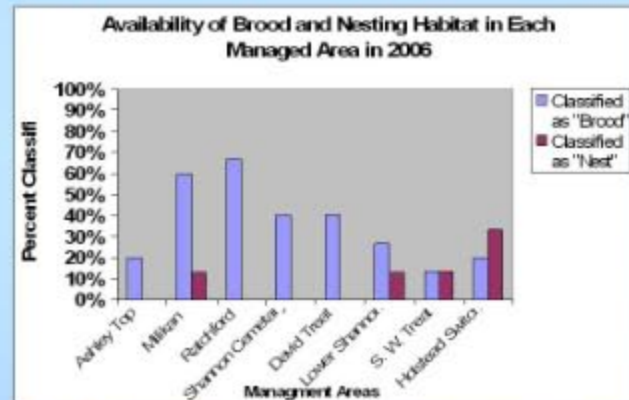


Figure 2 Percent of randomly selected habitat samples in each restored area that was classified as brood and nest habitat based upon the discriminant function. Notice that some management produced only brood habitat.

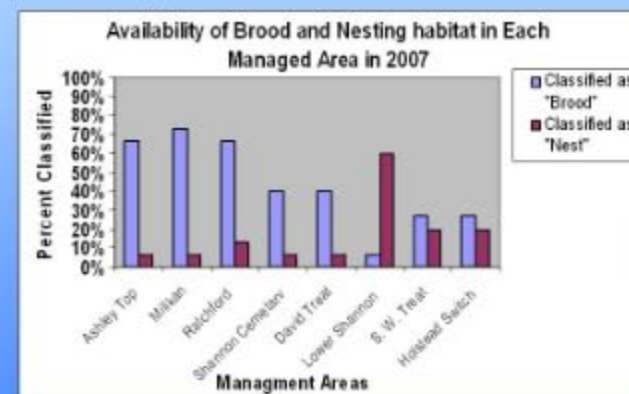


Figure 3 shows the availability of randomly selected habitat samples in each restored areas that were classified as brood habitat based on the discriminant function. The percentage of nesting and brood rearing habitat in each field are inversely related. Nest habitat availability generally increased between 2006 and 2007.



Ashley Top

Milikan

Ratchford field borders

The above habitats were classified as brood habitat by our discriminant function. They received fall clearing or disk stripping, a spring burn and spring planting of native bunch grasses.



Pre-treatment Shannon Cemetery

Lower Shannon

David Treat

These areas were fescue fields that received only burn treatments, the oldest of which (Lower Shannon burned spring of 2005) classified as nest habitat.



Holstead Switch Grass



S. W. Treat (bermuda grass)

Few samples on these areas were classified as brooding or nesting habitat. They probably do not represent good habitat for breeding quail.

Results

Bobwhite nest



Bobwhite Nesting Habitat



Bobwhite Brood Rearing Habitat

• **Nesting habitat** had more grass and litter, less bare ground and forbs and taller vegetation with more overhead cover compared to brood habitat (See photo above).

• **Brood rearing habitat** had less grass, more forbs and open space at ground level, and more bare ground compared to nesting habitat (See photo above)

Conclusions

- Management practices that produced bobwhite brood habitat involved fall **land clearing or disk striping**, **spring burning** and then planting of **native bunch grasses**.
- Management practices that produced nesting habitat received **burning only**.
- Management tended to produce **either** brood rearing habitat or nesting habitat but **not both**. However, **nest habitat increased** as managed areas aged.

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