

MANAGING FOR BOBWHITE QUAIL IN THE SOUTHEAST

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CONSULTANTS

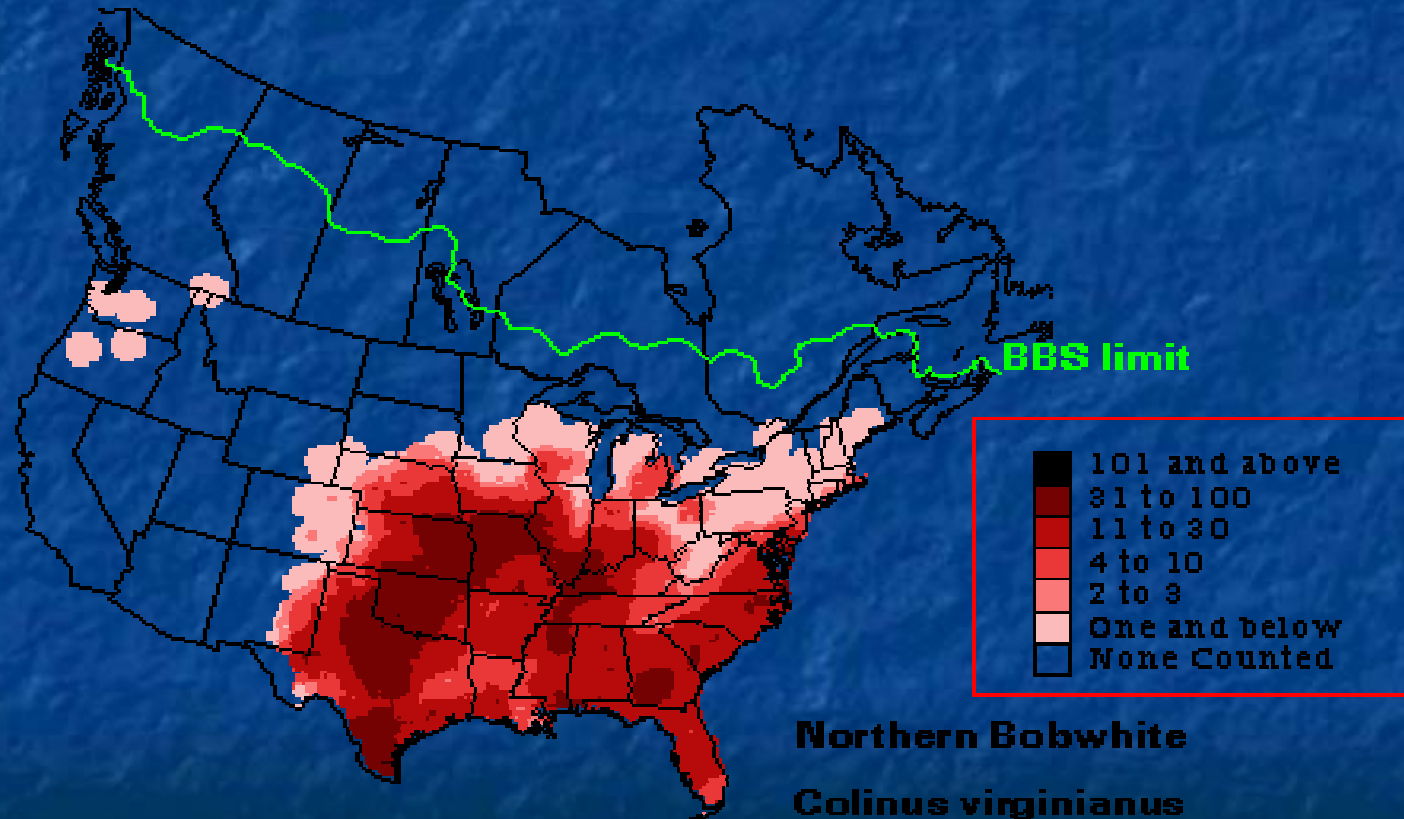
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Ecology and Management

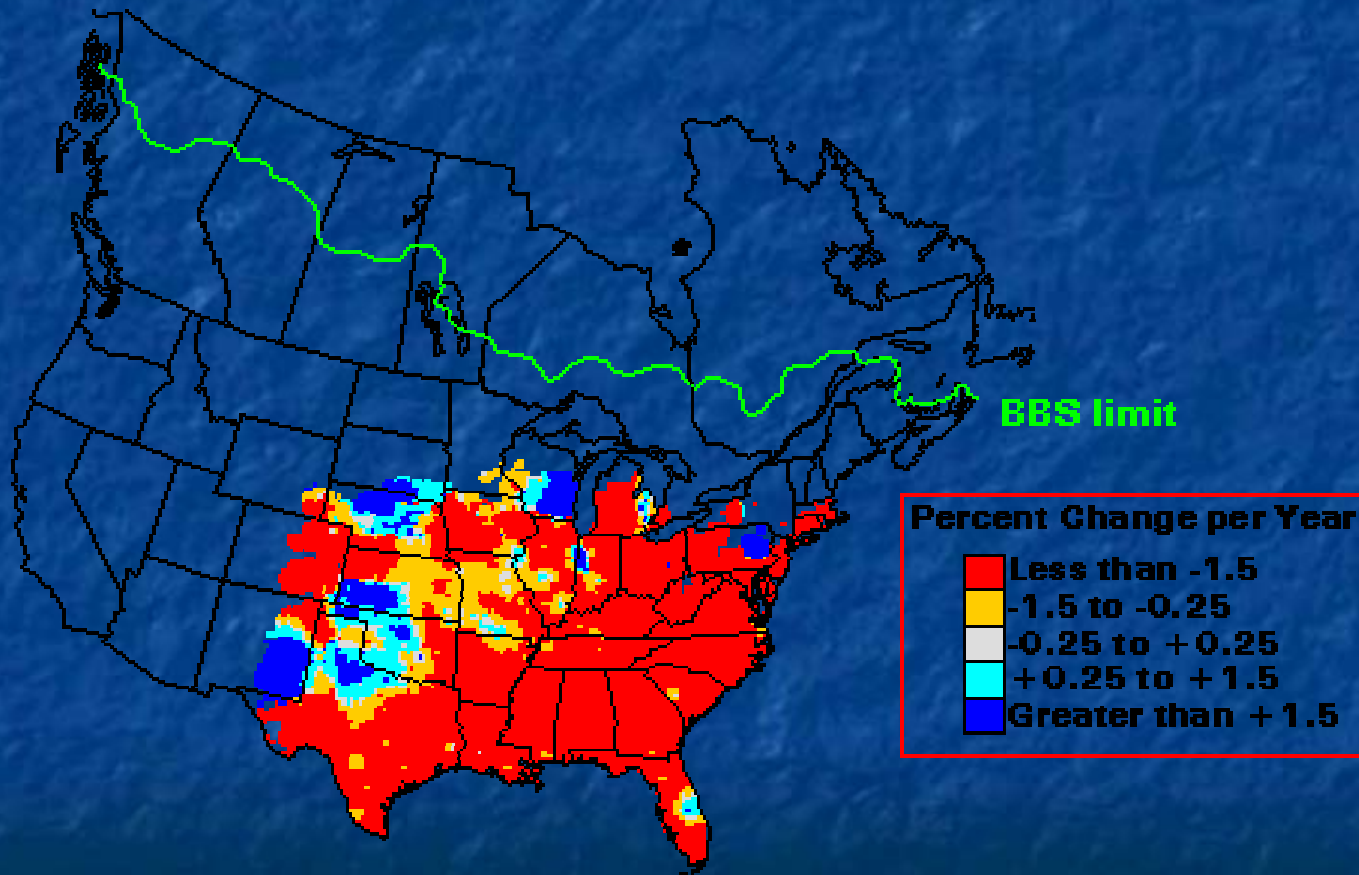
- **Population Trends**
- **Biology**
- **Habitat requirements**
- **Management**



Bobwhite Range Based on BBS



Trends in Bobwhite Populations



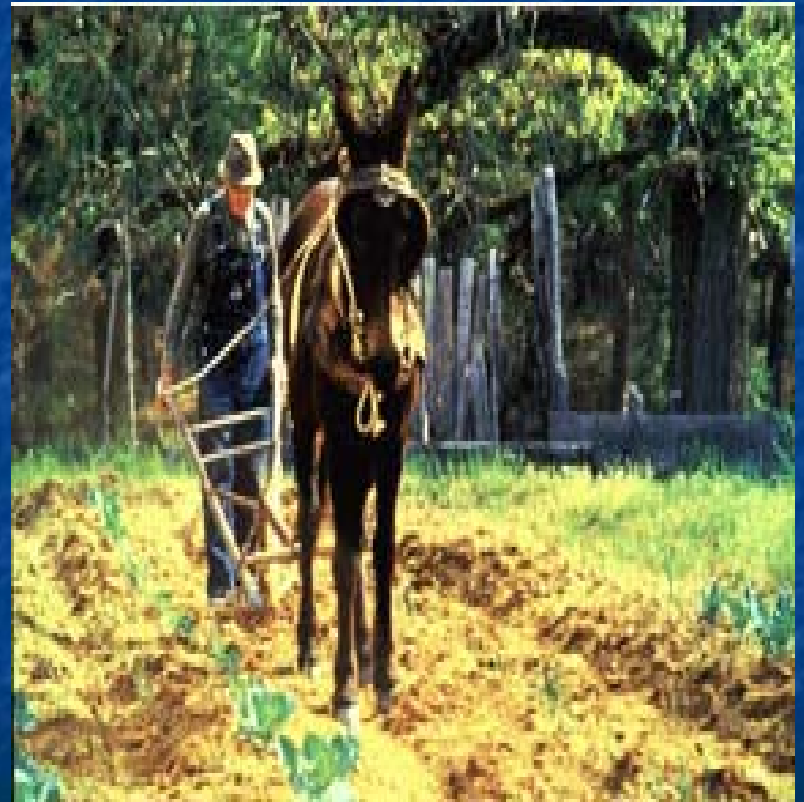
REASONS FOR DECLINE

- **Habitat loss**
- **Declining habitat quality**
- **Landscape level population processes**
- **Predation processes**



Historic Populations

- Primitive agriculture
- Diverse cropping and fallow practices
- Complex landscape
- By-product of land use



Modern Landscapes

- Large scale
- Monocultural
- Industrial



Agro-ecosystems



- **Loss of woody cover**
- **Loss of idle herbaceous cover**
- **Lack of prescribed fire**

Loss of Woody Cover

- **Decreases escape cover**
- **Decreases mast abundance**
- **Decreases thermal protection**



Elimination of Idle Herbaceous Cover

- **Loss of annual weed communities**
 - **Brood habitat**
 - **Foraging habitat**
 - **Roosting habitat**



LACK OF PRESCRIBED FIRE

- **Advanced natural succession**
- **Expansion of forest into previously none forested habitats**
- **Changes in forest structure**



Forested Landscapes

**Conversion of open lands
to forest**

**Intensive site
preparation**

Rapid canopy closure

**Lose early successional
window**





Bobwhite Adaptations

- **Granivorous**
- **Favor early successional habitats**
- **Ground nesters**
- **Relatively short-lived**
- **Breed multiple times a season**
- **Precocial young**



Annual Cycle of Bobwhite

- **Breeding Season**
 - Advertising and mate selection
 - Egg laying
 - Incubation
 - Brood-rearing



Annual Cycle of Bobwhite

- **Fall Covey Formation**
 - **Food limitations**
 - **Thermal requirements**
 - **Predator avoidance**



Advertising & Mate Selection

- Males attract females by calling
- Female selects nest site



Egg Laying

- Female lays 1 egg/1.2 days ave.
- ~18 days for 15-egg clutch



Egg Laying

- **Peak nest initiation**
 - **incubated first nests ~ 5 May**
 - **incubated nests ~ 28 July**
 - **-incubated renests ~ 25 August**



Incubation

- Male or female incubates eggs
- Incubation period is 23 days



Bobwhite Nest Success

- Average nest success 20 – 55%
- Takes an average of 2-3 attempts to produce 1 successful nest



Brood-rearing

- Chicks precocial
- First 2 weeks critical
- At 14 days chicks fly and thermoregulate
- Male or female parental care



Chick Survival

- **3-weeks – 36-55%**
- **Recruitment to fall – 25 – 36%**



Bobwhite Adult Survival

- Annual survival
 - 5 – 27%
- Over winter survival
 - 15-64%
- Breeding season survival
 - 33-44%



Adult Predators



Adult Predators



Adult Predators



Nest Predators



Nest Predators



Nest Predators



Manage Predators by Managing Habitat

- Thin mature pine < 60ft² BA /ac
- Thin pine plantations aggressively
- Control hardwood mid & overstory in pine stands
- Restrict hardwoods to natural drains
- Create & maintain adequate ground cover

To Manage Quail you Must Manage Succession

- Fire
- Disking
- Rotational cropping
- Herbicide
- Mowing



DISKING

- Sets back succession
- Inhibits woody invasion
- Stimulates germination of annual grasses and forbs



Prescribed Fire

- **Sets back succession**
- **Inhibits woody invasion**
- **Stimulates germination of grasses, forbs, and legumes**



Prescribed Fire

- **Reduces litter accumulation**
- **Creates bare ground**
- **Creates mosaic of communities**



Timber Thinning

- **Allows sunlight to forest floor**
- **Stimulates ground cover**
- **Thin often & early**
- **Thin heavily**
 - **30-40 ft²/ac**
 - **Poor sites thin to lower BA**





Field Borders

- **Native herbaceous community**
- **Provides**
 - **Increased usable space**
 - **Nesting habitat**
 - **Brood-rearing habitat**
 - **Roosting habitat**
 - **Holds birds on landscape**



CCRP – CP33

- **Habitat Buffers for Upland Birds**
- **Incentive payments for establishing and maintaining buffers.**
- **Applied adjacent to field edges of eligible cropland**
- **Program sign-up at local FSA**

Bobwhite Values

- Ecological
- Social
- Aesthetic
- Recreational
- Economic

