

## **Woodland Owner Lunch and Learn**

### **Managing Forest to Conserve Wildlife**

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***NO single forest stand can  
provide quality habitat for all  
wildlife species!!***

***For every management activity,  
there are winners and losers.***

***Food Plot Management Does  
Not Equal Wildlife  
Management!!***

## “Wildlife” is Meaningless

- What are your target species?
- Understand natural history
- Craft management appropriately



Do you want bobwhite?

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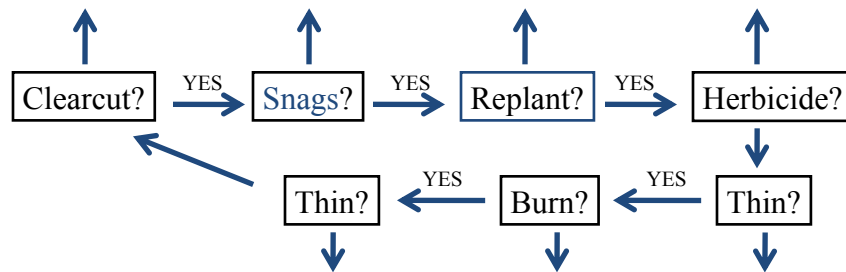
OR



Do you want ovenbirds?

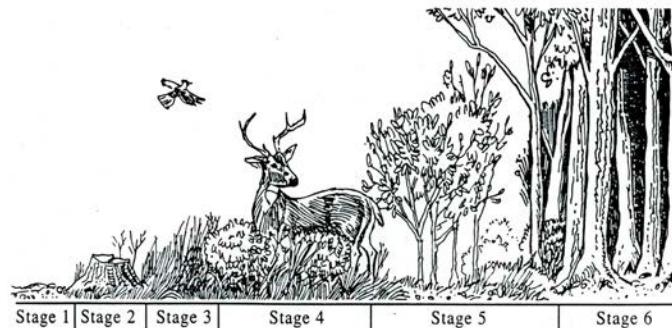
## Management Choices Matter

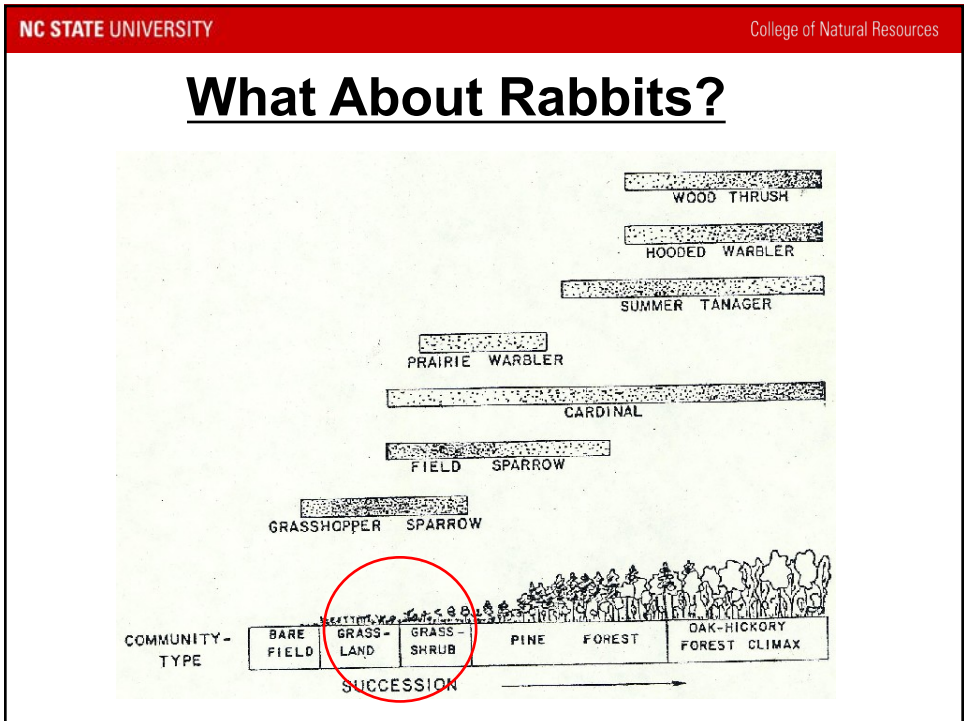
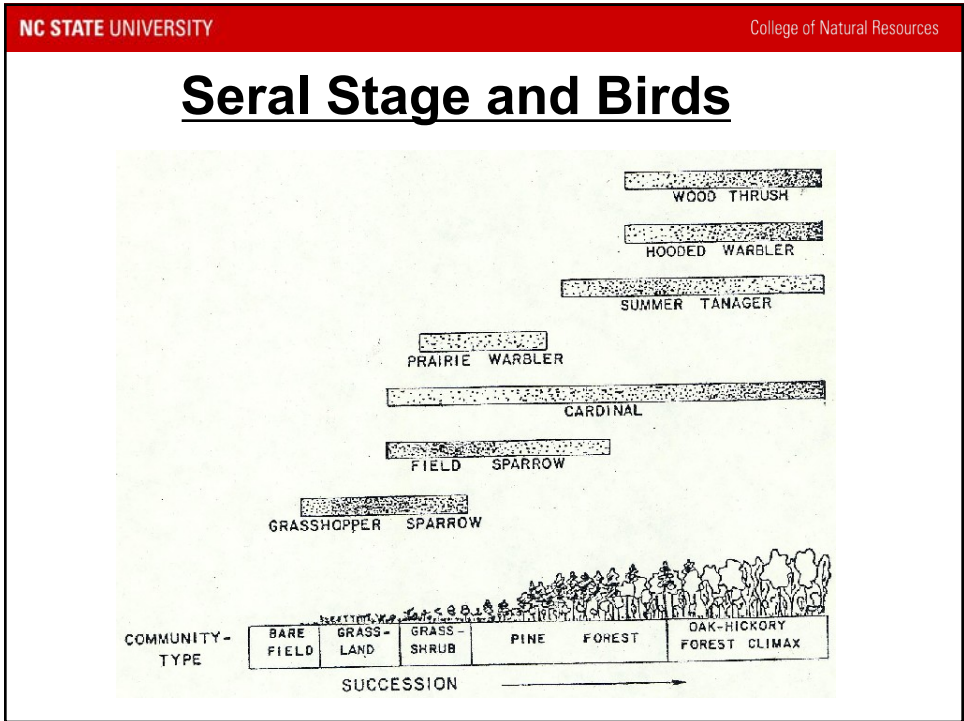
- What you do and don't do
- Particular size, severity, frequency, pattern



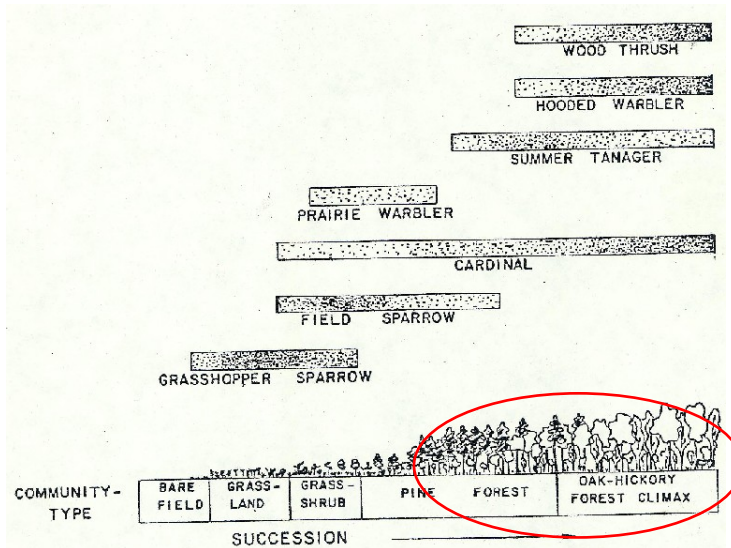
## Plant Succession and Wildlife

- Seral Stages - temporary stages of succession
- Different seral stages = different wildlife





## What About Gray Squirrels?



## Early-succession and Wildlife

- High forage production (>2000 lbs/ac)
- Grass-forb as nest and brood cover
- Abundant seed & fruit
- Dense cover



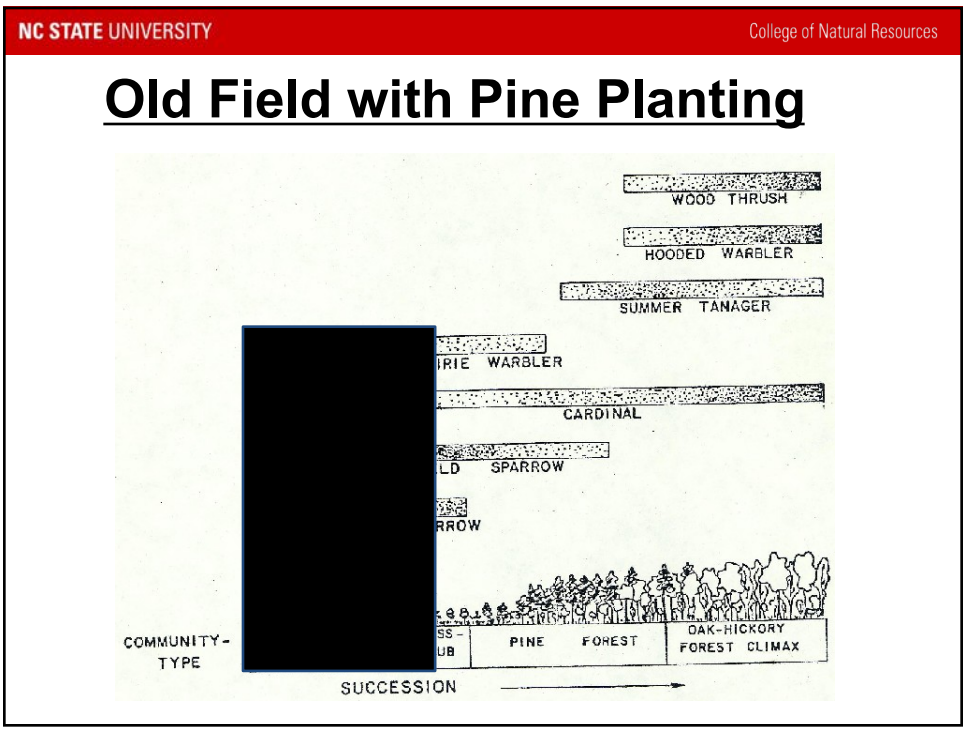
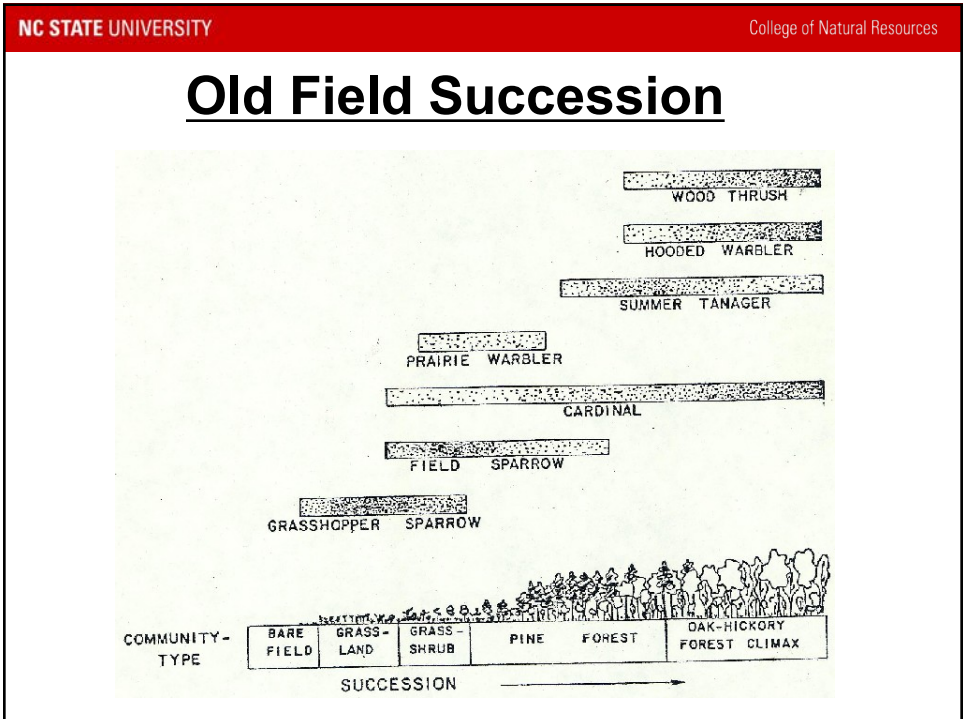
*Northern bobwhite use shrubland*

## An Old Field



## Tree Planting Speeds Succession





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**Sprouts Speed Succession**



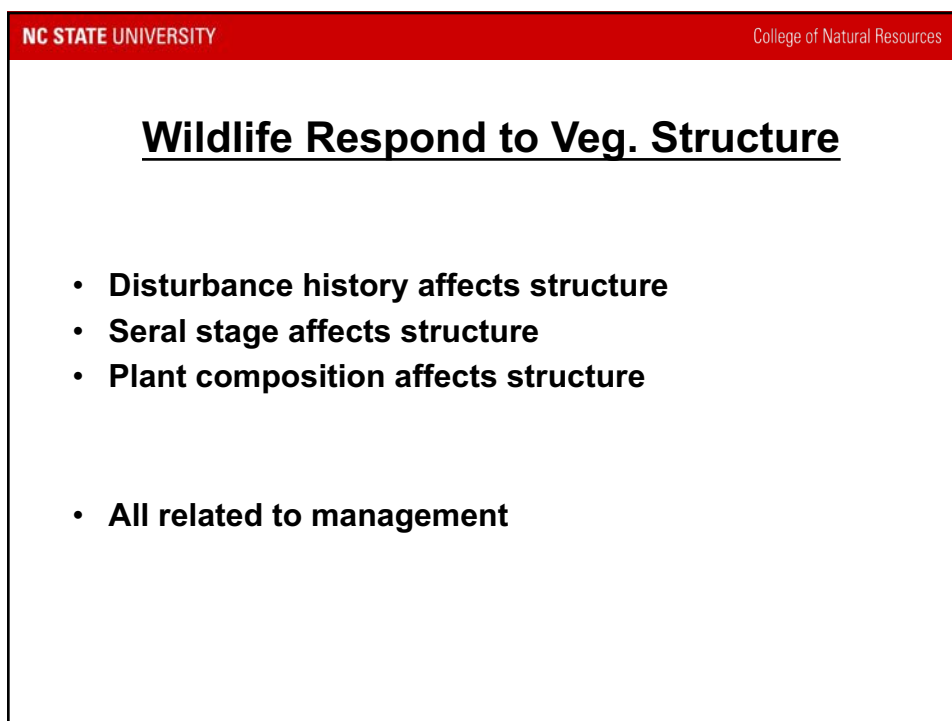
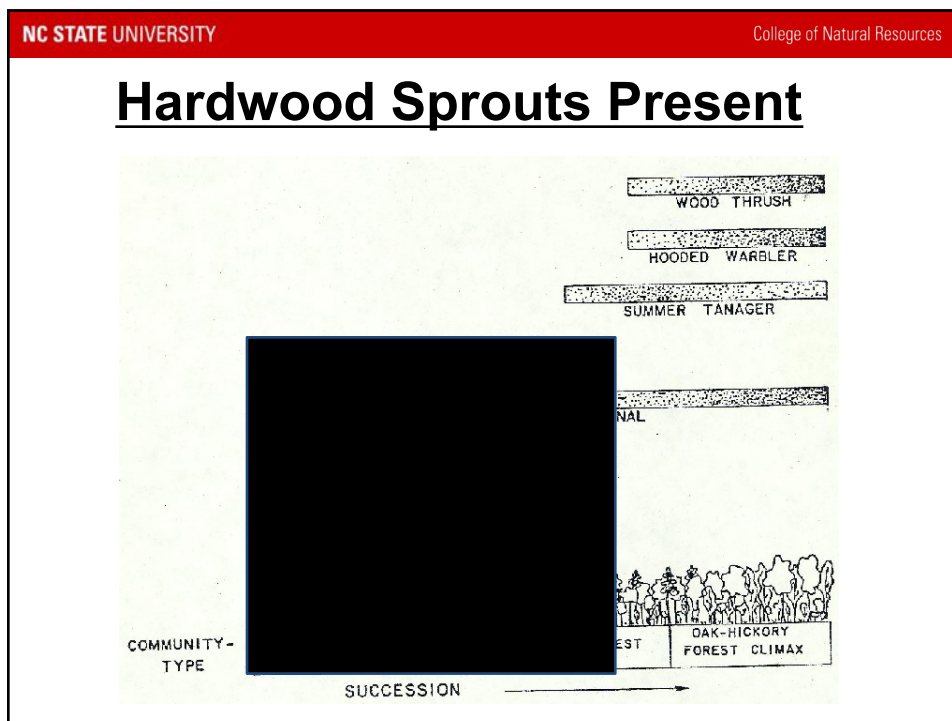
A photograph of a forest with large, mature trees and a dense green undergrowth of sprouts. The trees are tall and thin, with a thick canopy of green leaves. The ground is covered in a lush carpet of green plants and ferns, indicating a young forest or a forest in the early stages of succession.

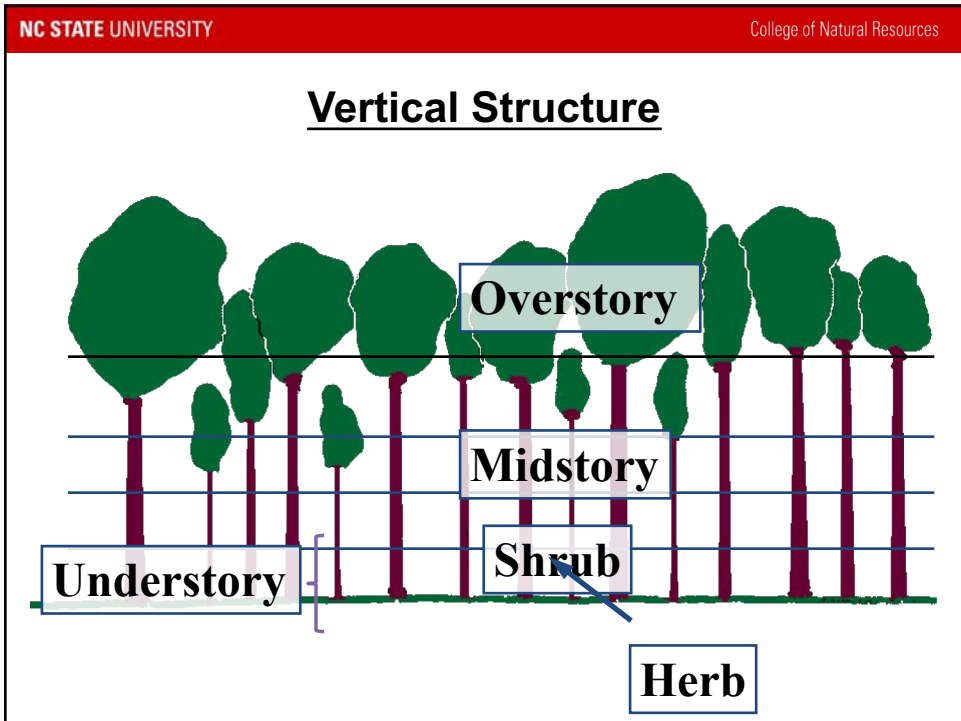
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**Sprouts Speed Succession**



A photograph of a forest with many thin, young trees and a sparse undergrowth. The trees are tall and thin, with a canopy of green leaves. The ground is covered in a sparse carpet of green plants and ferns, indicating a young forest or a forest in the early stages of succession.

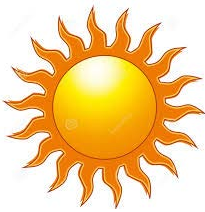


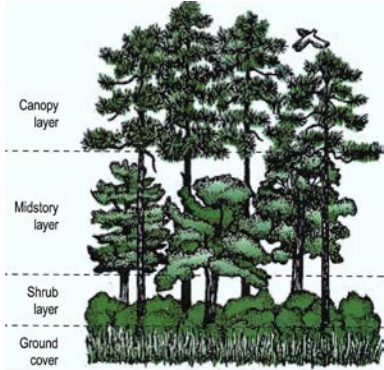


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## Vertical Structure

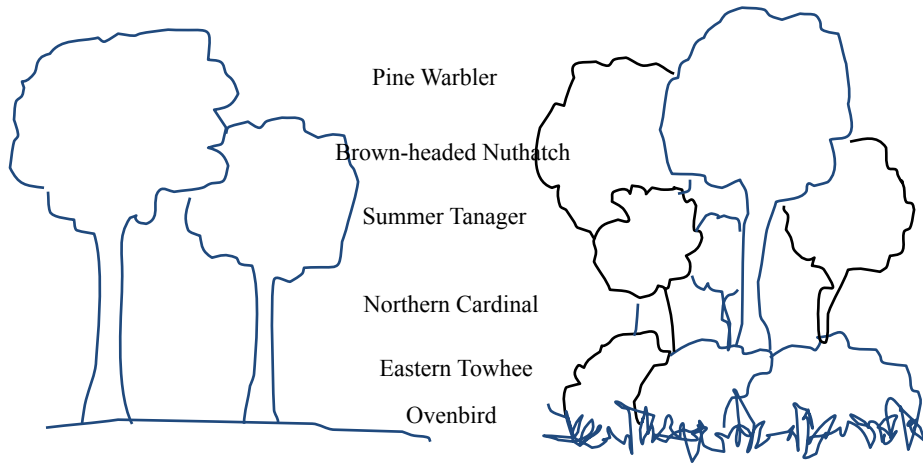
- **How many forest layers?**
- **Birds segregate vertically**
- **Understory important**
  - deer, quail, rabbits





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## Vertical Structure and Birds



Pine Warbler

Brown-headed Nuthatch

Summer Tanager

Northern Cardinal

Eastern Towhee

Ovenbird

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## Poor Vertical Structure



Where Quail Go To Die

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## Retention Harvests Retain Structure



Clearcut with No Overstory Trees

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## Retention Harvests Retain Structure




Oak Shelterwood Retention Harvest

This photograph shows a forest landscape after a retention harvest. The ground is covered in a dense layer of green undergrowth, including ferns and small plants. Several tall, thin trees remain standing, spaced out across the slope. A person wearing a white shirt and a hat is standing in the lower right portion of the image, providing a sense of scale. The overall appearance is that of a young forest with a preserved structure.

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## Pre-commercial Thin to Retain Structure



Before UGA0908031

After UGA1171029

This block contains two side-by-side photographs of a pine forest. The 'Before' image on the left shows a very dense stand of young pine trees with a thick canopy. The 'After' image on the right shows the same area after a thinning operation, with many trees removed, leaving a more open forest floor with scattered pine needles and a clear view of the remaining trees against a blue sky. The labels 'Before' and 'After' are in white boxes at the bottom left of each image. The image IDs 'UGA0908031' and 'UGA1171029' are visible in the bottom right corner of each photo.

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## Commercial Thin to Increase Structure



Area Thinning

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## Commercial Thin to Increase Structure



Row Thinning

## Commercial Thinning Targets

- **Depends on focal species!**
- **Generally, <70% canopy cover**
- **<70-80 ft<sup>2</sup>/ac basal area (BA) for pines**
  - **< 50 ft<sup>2</sup>/ac BA for northern bobwhite**
  - **Greater BA where *site index* is higher**

## Thinning Effects on Vegetation

- **Open, diverse structure**
- **Promotes understory development**
- **Benefits:**
  - **Increased forage for deer**
  - **More understory fruit**
  - **Turkey nesting and fawn hiding cover**
  - **Pine woodland birds**



## Midstory Encroachment is Rapid



## Frequent Burn to Limit Midstory



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## Frequent Burn to Limit Midstory



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## Thin AND Burn



*Too little light!*



*Too much litter!*

## Fire and Wildlife

- **Most animals adapted to frequent fire**
- **Fire critical to maintain wildlife diversity**
- **Declining SE wildlife are fire-assisted**



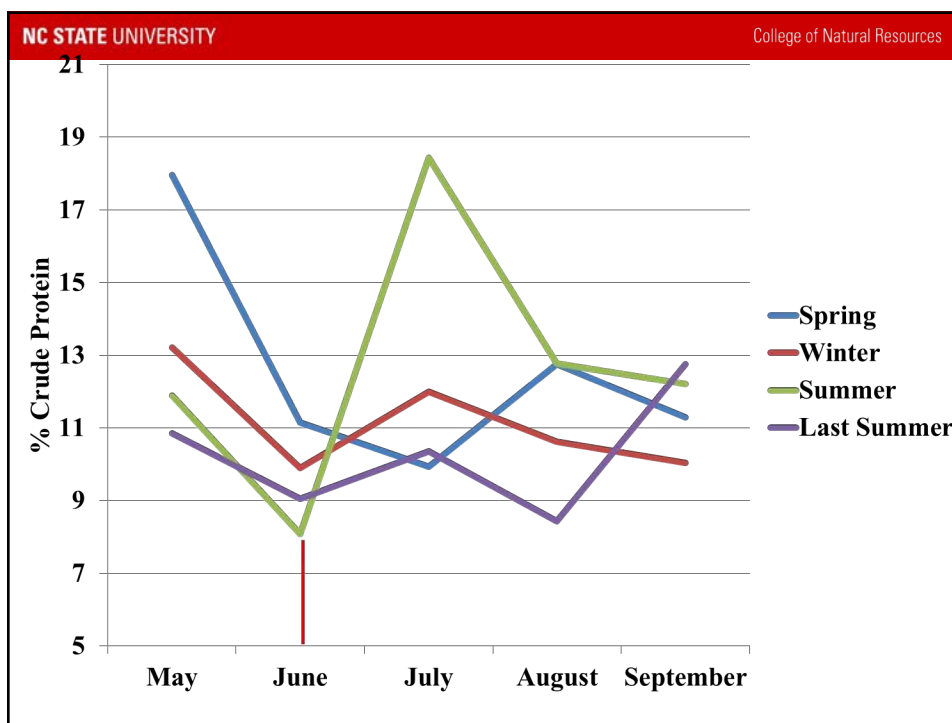
*Gopher Tortoise*

## Wildlife Benefits from Fire

- **Change structure**
- **Shift composition to more herbaceous**
- **More available browse nutrition**
  - **New growth more palatable**
- **Increased fruit**
  - **2 to 5 years after fire**



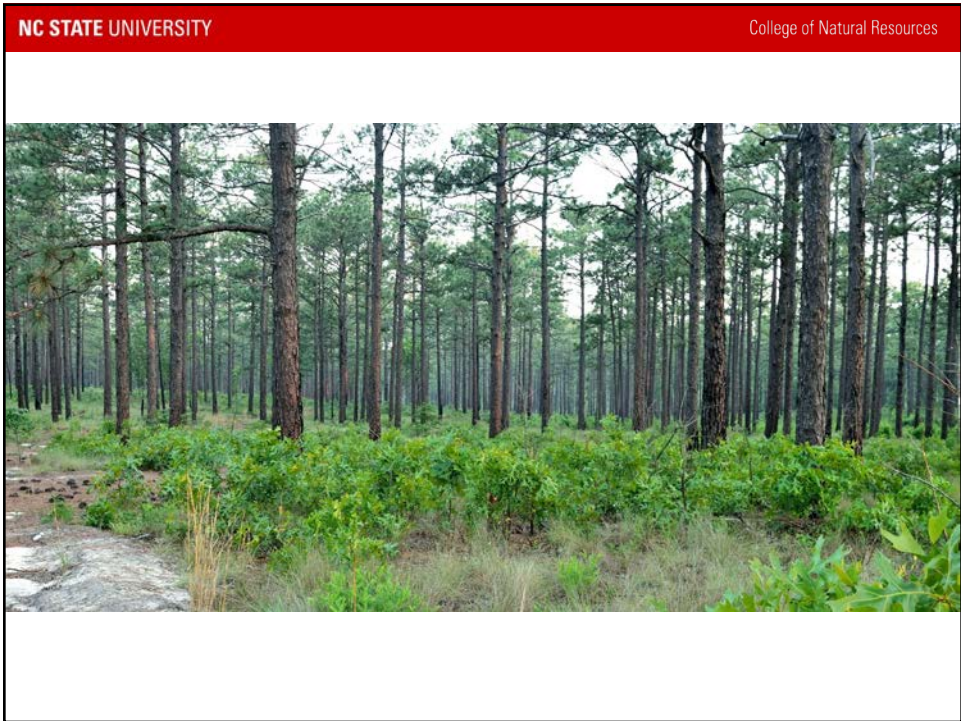
*Desmodium sp.*



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fire **OR** **FIRE**

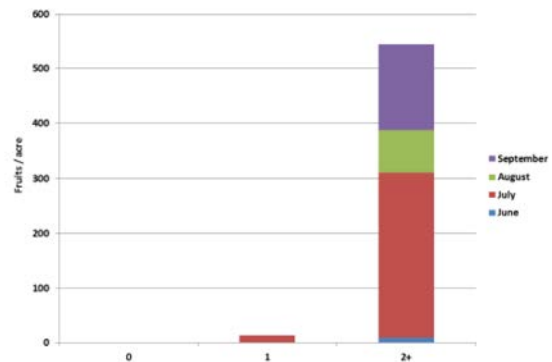
- ONCE is not enough
- Repeated and frequent fires shift:
  - Vegetation structure
  - Vegetation composition
- Frequency and intensity matter



## Frequent (1-2 Year) Burns

- More grasses and forbs
- But, eliminates most understory fruit

Soft Mast in Pines (Years Since Burned)



*Upland pines contained little understory fruit the same year as fire and the year after fire*

## Less frequent (3-6 Year) Burns

More woody understory and midstory

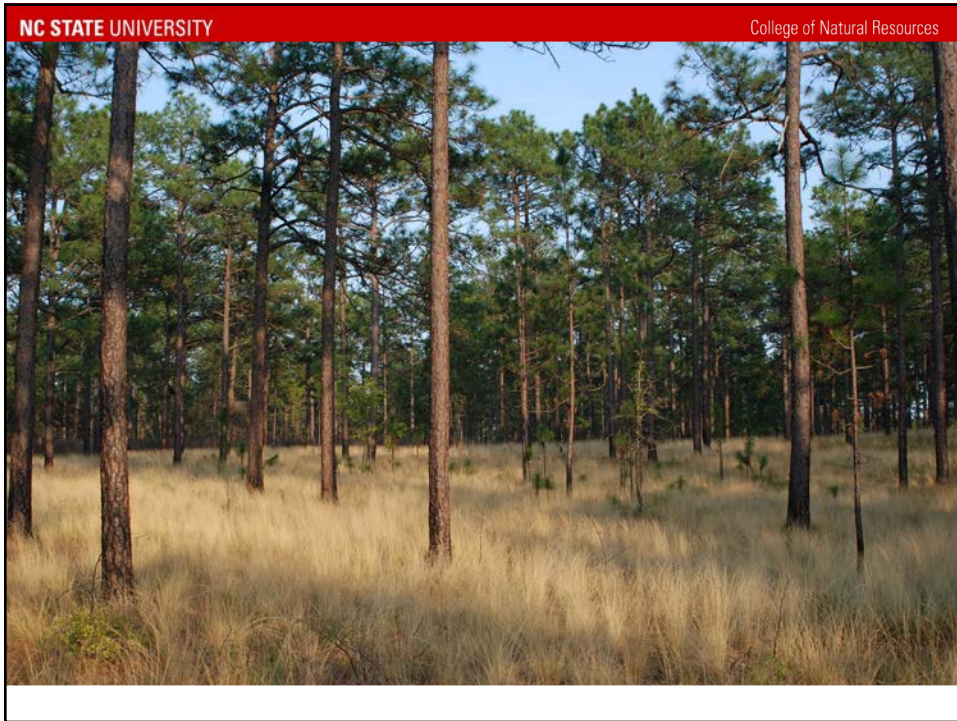


Craig Harper

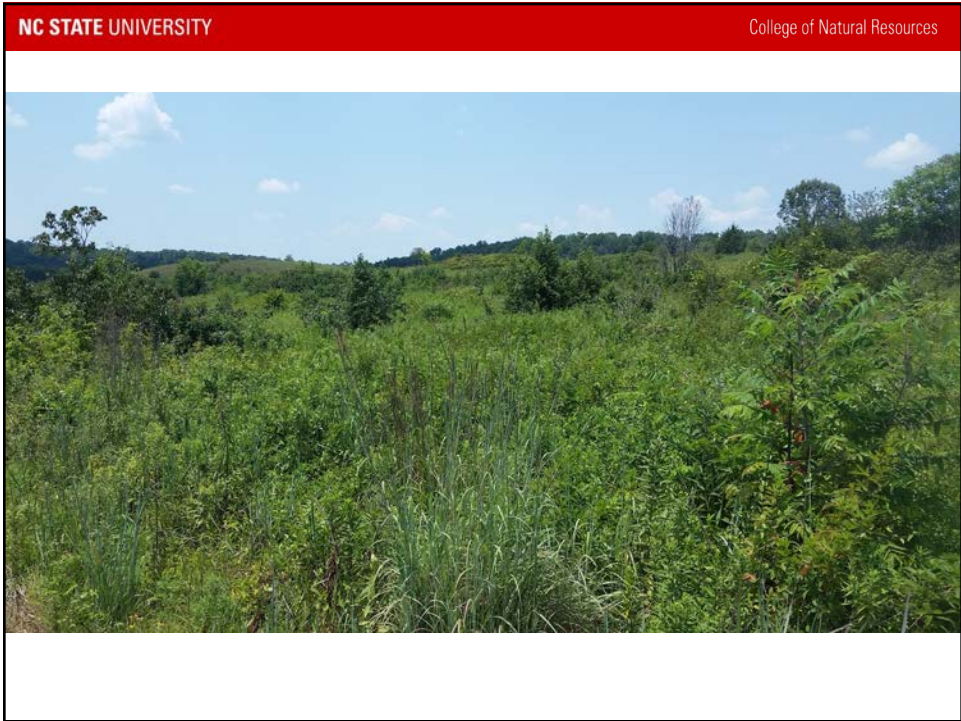
## Herbicides Complement Fire?

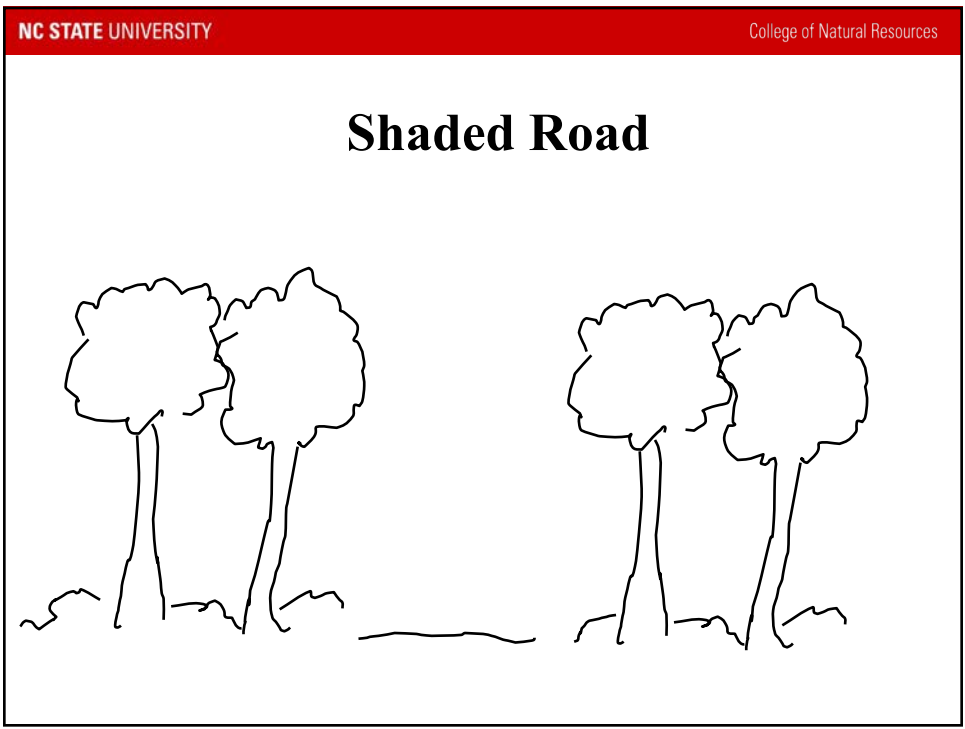
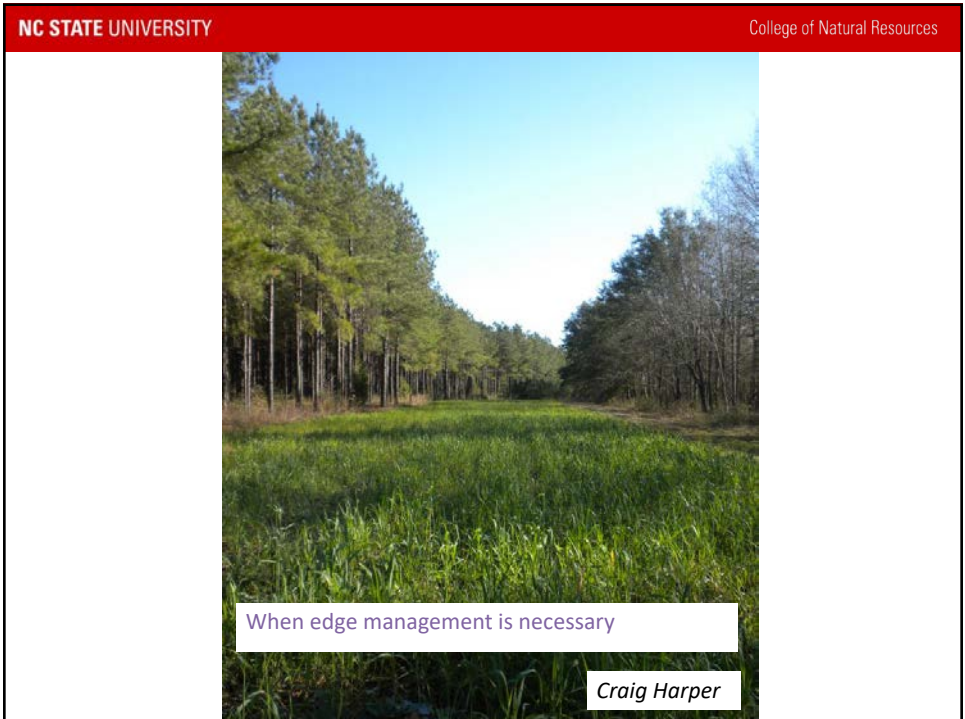
- **Herbicides used to shift hardwood component towards ground**
  - Valuable tool in restoring degraded stands
  - Limits need for intense fire
- **Herbicides + fire have additive effects**
  - Greater herbaceous plant diversity

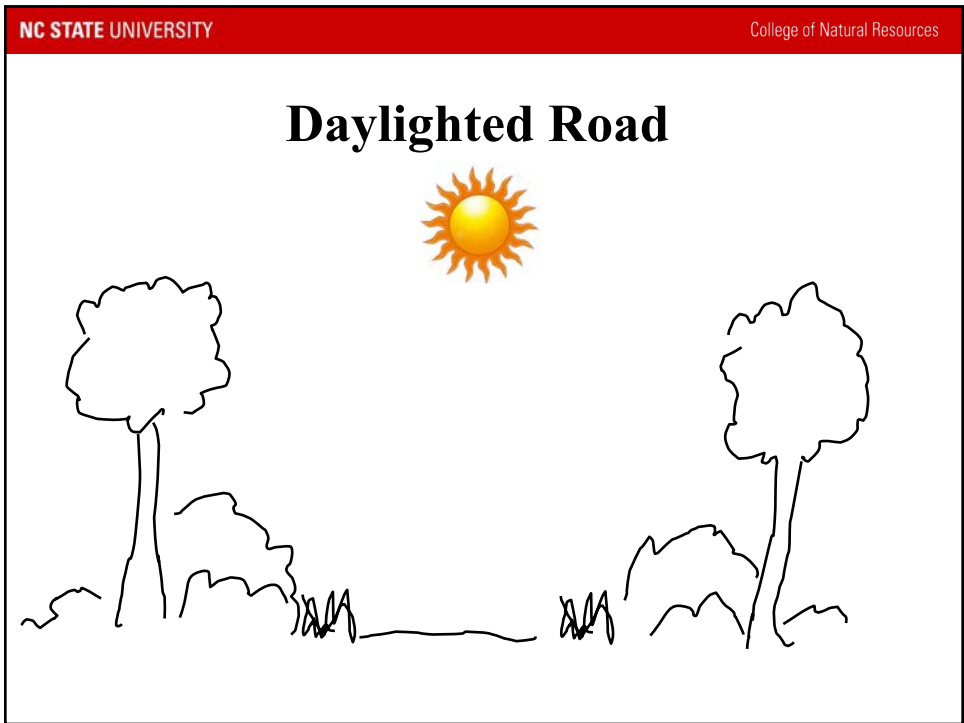












## Conserve Snags

- **>10" diameter**
- **In retention areas**
- **Live trees to die**
- **Become down logs**




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### Retain Down Logs



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### Retain Down Logs



## Summary

- Define your focal species
- To increase overall wildlife diversity:
  - Increase seral stage diversity
  - Increase vertical structure
- Prescribed burn using appropriate regime
- Get light to the forest floor (*thin & burn*)
- Retain dead wood

<https://forestry.ces.ncsu.edu/forestry-wildlife/>

Questions?

