



Creating and Maintaining
Upland Habitat

QUAIL

forever

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Duties of a Farm Bill Biologist



- Visit with Landowners
- Provide Management Plans
- Assist Landowners in Cost Share Process
- Coordinate/Participate in outreach

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North Carolina Woods for Wildlife Conservation Initiative

- Woods for Wildlife Conservation Initiative strives to engage more woodland owners in forest management and certification, enhance habitat for species of conservation concern, and promote the conservation of imperiled habitats, including longleaf and bottomland hardwood forests.
- Project focus on 14 counties in the South Eastern portion of NC



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Outline

- Wildlife and Timber Importance
- Importance of Private Lands
- Wildlife Needs
 - Meeting those needs
- Cost Share Opportunities

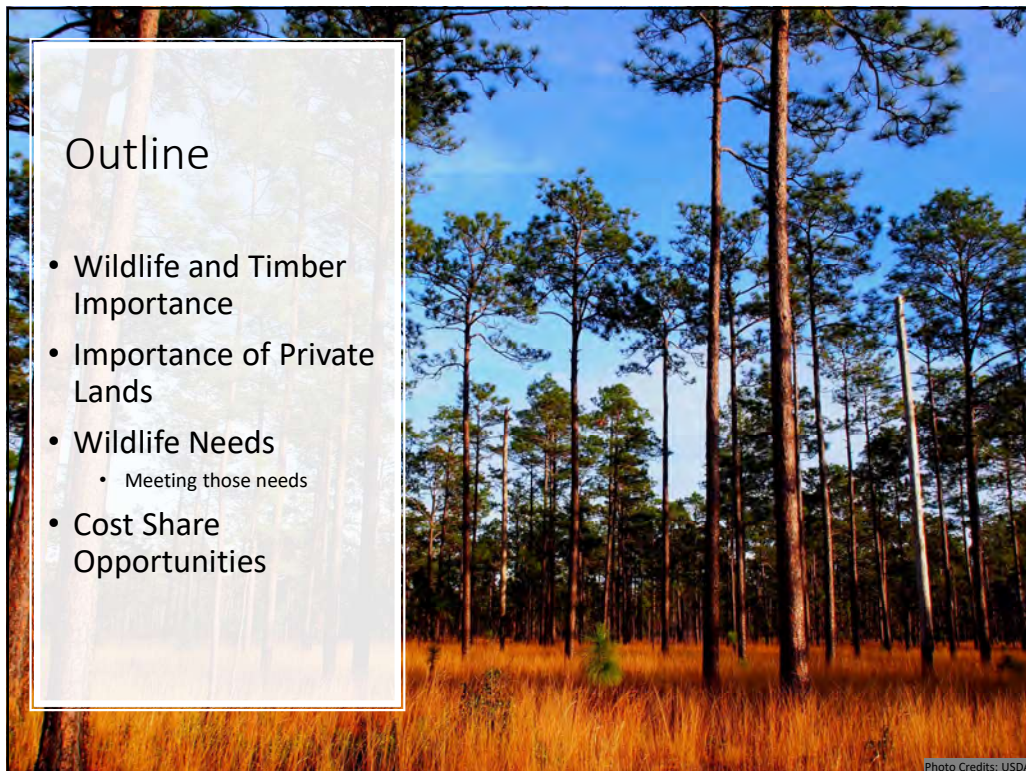


Photo Credits: USDA

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Photo Credits: National Audubon Society

Photo Credits: The Nature Conservancy

Photo Credits: nytreefarm

Photo Credits: TN Wildlife

Photo Credits: Quail Forever

Photo Credits: US Fish and Wildlife

Importance of Wildlife in NC

- All 13 states rank in top 23 nationally for total number of wildlife species (NatureServe, 2002)
- Most diverse wildlife occurs in longleaf forest
- Home of many historic wildlife species

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Photo Credits: laforestry

Photo Credits: bangordailynews

Photo Credits: New Scientist

Photo Credits: Our State Magazine

Timber Importance

- Longleaf once used for pine resin produces
- Timber focus shifted causing a shift in habitats
- “Americas Wood Basket”
 - 57% of the nations wood (Hanson et al., 2010)
 - 1.1 million jobs
 - \$230 billion in regional economy

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Photo Credits: USDA

Role of Landowners




Photo Credits: South Carolina Wildlife Federation

Wildlife

- All 13 states rank in top 23 nationally for total number of wildlife species (NatureServe, 2002)
- Most diverse wildlife occurs in longleaf forest
- Serves as a place of recreation and relaxation

Timber

- “Americas Wood Basket”
- 57% of the nations wood (Hanson et al., 2010)
- 1.1 million jobs
- \$230 billion in regional economy
- Provides income to landowners

Happy Medium

- Establishing objectives and goals to best meet wildlife and timber objectives.

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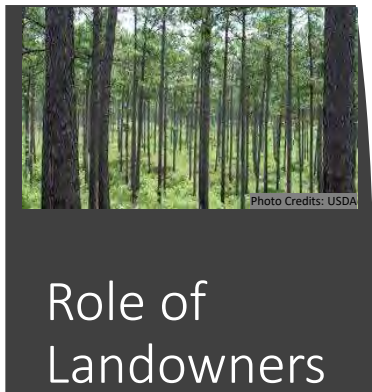



Photo Credits: USDA

Role of Landowners

State of Private Land

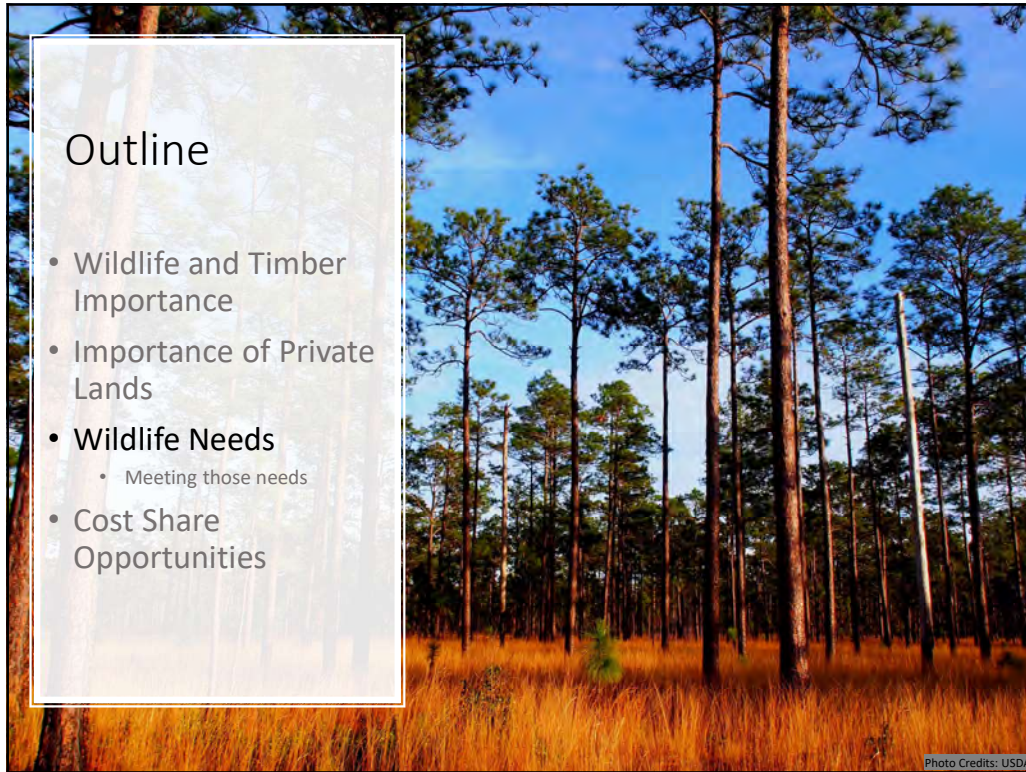
- Vast majority of Southern forest are privately held
- 9 out of 10 ac private
- NC slightly less with 85% of land being privately held



North Carolina Conservation Planning Tool
Open Space and Conservation Lands

May 2018

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Wildlife Needs

- **Food**
 - **Hard Mast**
 - Hard shelled Seeds
 - Produced in Fall
 - High Calorie
 - Variable Production

Photo Credits: Native Forest Nursery

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Wildlife Needs

- Food
 - Hard Mast
 - Soft Mast
 - Fleshy Fruits
 - High in Sugar
 - High Presence in Spring and Summer



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Wildlife Needs

- Food
 - Hard Mast
 - Soft Mast
 - Ground Forage
 - Grass
 - Forbs
 - Shrubs
 - Dependent on Disturbance
 - Creates Early Successional Habitat



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Wildlife Needs

- Food
- Cover
 - Minimizes predation
 - Shelter



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Wildlife Needs

- Food
- Cover
- Water
 - Doesn't have to be large scale
 - Amphibians & wetland obligate species



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Wildlife Needs

- Food
- Cover
- Water
 - Doesn't have to be large scale
 - Amphibians & wetland obligate species
 - Think Small Scale



Photo Credits: NC Wetlands

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Wildlife Needs

- Food
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 - Think Small Scale



Photo Credits: NC State Climate Office

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Wildlife Needs

- Food
- Cover
- Water
- Space
 - Home Range
 - Driven by Habitat Quality
 - Driving factor in home range is habitat fragmentation



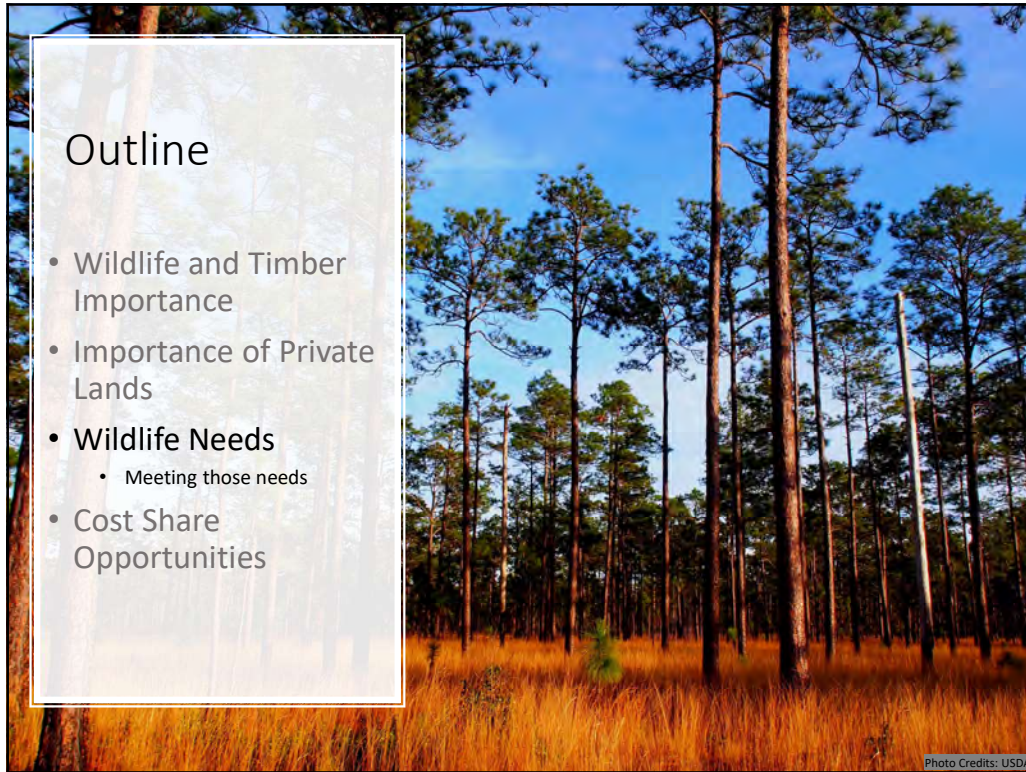
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Wildlife Needs

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Maintaining Food, Cover, Water, and Space for Wildlife

- **Prescribed Fire**
 - Variable Outcomes:



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Maintaining Food, Cover, Water, and Space for Wildlife

- Prescribed Fire
 - Variable Outcomes:
 - Timing



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Maintaining Food, Cover, Water, and Space for Wildlife

- Prescribed Fire
 - Variable Outcomes:
 - Timing
 - Burn Interval



Figure 2. Structural characteristics of a southern pine forest from different intervals of prescribed burning: (A) control—no burn, (B) prescribed burn on a three-year interval, (C) prescribed burn on a two-year interval, and (D) prescribed burn on a one-year interval.

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Maintaining Food, Cover, Water, and Space for Wildlife

- Prescribed Fire
 - Variable Outcomes:
 - Timing
 - Burn Interval



Table 2. Fire prescriptions for specific North Carolina wildlife species.

Species	Fire Frequency (Years)	Purpose	Concerns
White-tailed deer	3-5	Improve browse production and nutrition	Fawns
Northern bobwhite**	1-3	Improve nesting and feeding cover, increase food	Nests*
Wild turkey	2-5	Improve nesting and feeding cover, increase food	Nests
Grassland songbirds**	2-3	Improve nesting and feeding cover, increase food	Nests*
Shrubland songbirds	2-5	Improve nesting and feeding cover, increase food	Nests*
Eastern cottontail	3-5	Improve food and cover	Nests*
Small mammals	1-5	Improve food and cover	Slow-moving animals
Reptiles**	1-5	Improve habitat	Slow-moving animals
Amphibians	3-50	Improve habitat	Slow-moving animals
Butterflies**	1-3	Increase diversity of wildflowers (nectar sources)	None

* Leave unburned spots for nest sites and places to escape from predators.
 ** Animals that may prefer habitat conditions created by growing season burns.

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Maintaining Food, Cover, Water, and Space for Wildlife

- Prescribed Fire
 - Variable Outcomes:
 - Timing
 - Burn Interval
 - Intensity
 - Backing
 - Head
 - Strip



Figure 14. Backing fires are lit on the downwind edge of the stand and burn very slowly.



Figure 15. Strip head fires are set at varying distances apart depending on burning conditions and the desired flame intensity.



Figure 16. Intense ring fires with fast-moving flames leave no escape pathway for wildlife.

Photo Credits: NC State Extension

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Maintaining Food, Cover, Water, and Space

- Prescribed Fire
- Herbicide
 - Control 10+ year hardwoods
 - Used to prepare for prescribed burn
 - Used in suburban areas where smoke management is a problem



Photo Credits: MS State Extension

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Maintaining Food, Cover, Water, and Space

- Prescribed Fire
- Herbicide
- Thinning



Photo Credits: Alabama Extension

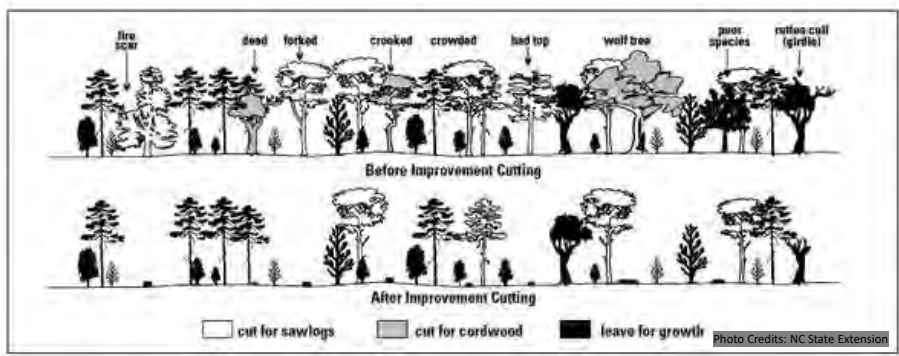


Photo Credits: National Bobwhite Conservation Initiative

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Maintaining Food, Cover, Water, and Space

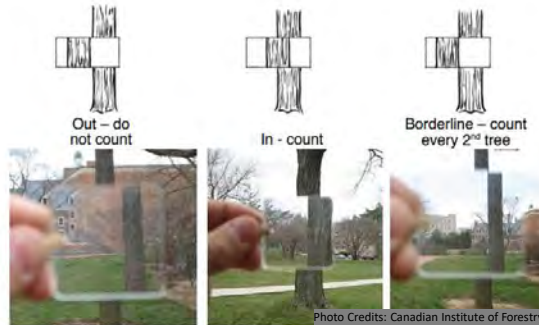
- Prescribed Fire
- Herbicide
- Thinning



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Maintaining Food, Cover, Water, and Space

- Prescribed Fire
- Herbicide
- Thinning
 - Basial Area



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Maintaining Food, Cover, Water, and Space

- Prescribed Fire
- Herbicide
- Thinning
 - Basial Area

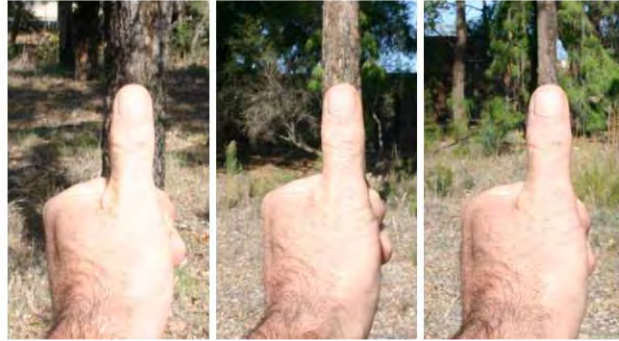
Figure 1: *W* tree

Figure 2: Borderline tree

Figure 3: *OUT* tree

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Maintaining Food, Cover, Water, and Space

- Prescribed Fire
- Herbicide
- Thinning
- Clear Cutting
 - Set back successional habitat
 - Cut when forest reaches maturity

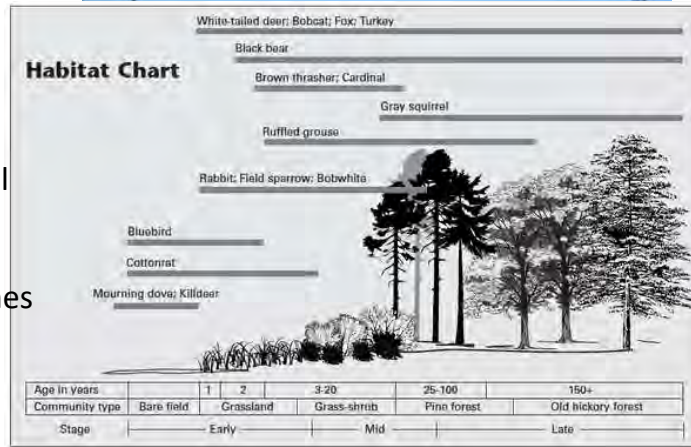


Photo Credits: Bryan Mudder

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Maintaining Food, Cover, Water, and Space

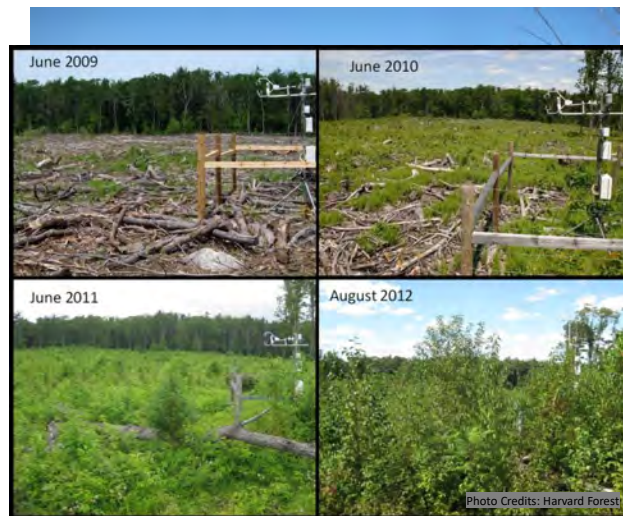
- Prescribed Fire
- Herbicide
- Thinning
- Clear Cutting
 - Set back successional habitat
 - Cut when forest reaches maturity



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Maintaining Food, Cover, Water, and Space

- Prescribed Fire
- Herbicide
- Thinning
- Clear Cutting
 - Regeneration provides habitat for 3 years
 - Growths needs to be set back



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Maintaining Food, Cover, Water, and Space

- Prescribed Fire
- Herbicide
- Thinning
- Clear Cutting
 - Consider replanting before clear-cut



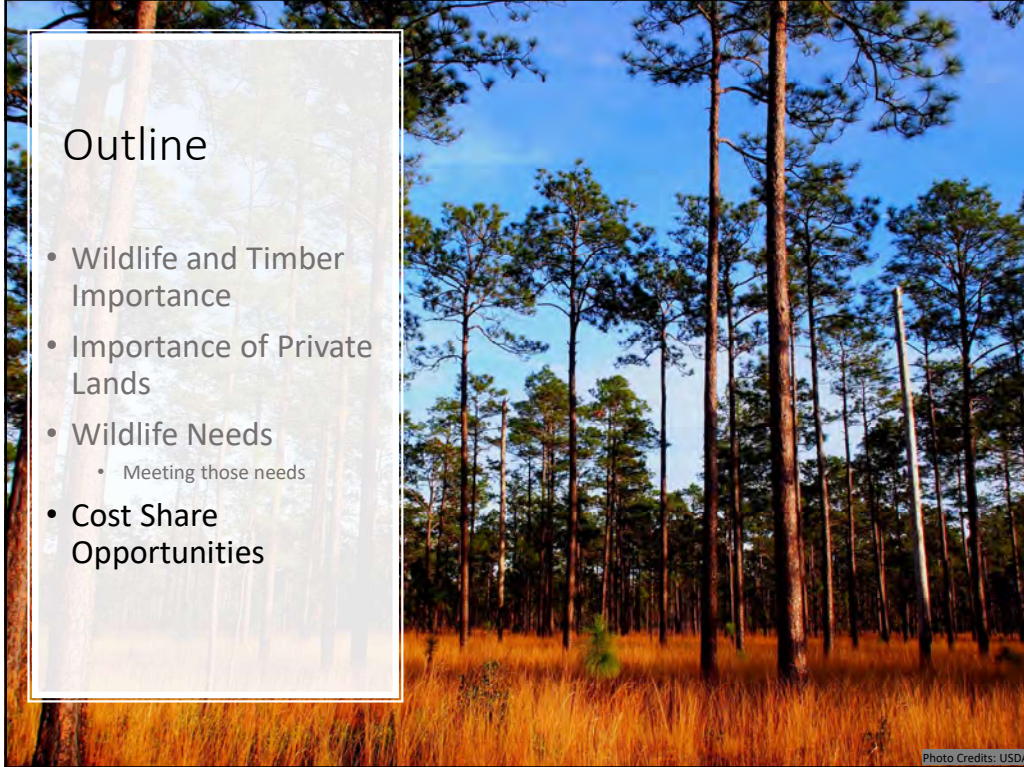
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Maintaining Food, Cover, Water, and Space

- Prescribed Fire
- Herbicide
- Thinning
- Clear Cutting
 - Non-Uniform



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- Wildlife and Timber Importance
- Importance of Private Lands
- Wildlife Needs
 - Meeting those needs
- Cost Share Opportunities

Photo Credits: USDA

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Financial Assistance Available



- Forest Development Program
 - Goals: Timber production and the creation of the benefits associated with active forest management
 - Requires forest management plan approved by NCFS
 - Cost share practices for site preparation, tree planting, and forest stand improvements
 - 40-60% cost share coverage

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Financial Assistance Available



- US Fish & Wildlife Service

- Goal: "Promote and implement habitat improvement projects that benefit Federal trust species, provide conservation leadership and promote partnerships, encourage public understanding and participation, and to work with USDA to implement Farm Bill conservation programs."
 - Private landowners
 - Provide Technical Assistance and Planning

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Financial Assistance Available



- Forest Landbird Legacy Program

- "Guides and Supports land management and habitat restoration to benefit forest birds"
- Financial Assistance
- Focus on mature tracts 50 years old and 50 ac in size
 - Exceptions exist depending on surrounding landscape
- Contribute up to 75% of the Cost

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Financial Assistance Available



- Farm Bill Programs
- Environmental Quality Incentives Program
 - 75-90% of cost
 - Focuses on specific one time practices
 - Site prep
 - Tree planting
 - Pre-commercial thinning

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Financial Assistance Available



- Farm Bill Programs
- Conservation Stewardship Program
 - Focuses on long term enhancements
 - Short interval Burning

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Financial Assistance Available



- Farm Bill Programs
 - Conservation Reserve Program
 - Focus on restoring agricultural land
 - 10-15 year contract
 - Soil rental payments

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Financial Assistance Available

Don't be overwhelmed! We are here to help!

Always keep your objectives and goals first

Know forest management is active management

Stay Persistent

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Contacts for Landowners

- Quail Forever Biologist
 - <https://quailforever.org/Habitat/findBiologist.aspx>
- NC Wildlife Resource Commission Biologist
 - <https://www.ncwildlife.org/Portals/0/Hunting/Documents/WMDistrictBiologistContacts.pdf>
- NC Forest Service Contacts
 - https://www.ncforestservation.gov/contacts/contacts_main.htm
- US Fish and Wildlife Contacts
 - <https://www.fws.gov/info/pocketguide/regionalcontacts/fieldlocations.html>

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Questions?

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