INTRODUCTION TO WILDLIFE MANAGEMENT

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Outline

- Historical Wildlife Management
- Contemporary Wildlife Management
- Common Wildlife
- Forest Management for Wildlife
- Monitoring Wildlife

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A History of Wildlife Management

- British Wildlife Allocation Laws
  - Based on Social Status

Nobility

Peasants

Early American Hunting

"Game and Fish were free and common to any Person who can shoot or take them, with any let, hindrance of opposition whatsoever."

→ Freedom of Trespass

→ Animals owned by Capturer

Early American Hunting

1646 – First Hunting Restriction
(Portsmouth, Rhode Island)

1800 – All 13 Colonies Restrict White-tail deer harvest
(No enforcement)

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Eastern Oysters Shape The Future of Wildlife

1842 – *Martin vs. Wadell*

US Supreme Court determined the Public Trust Doctrine for wildlife…

i.e., State Governments, not private individuals, had a public responsibility to manage natural resources.

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Market Hunting

- Duck Market Hunting (1880-1910s)
  - Meat market
  - Feather hats

"In the old days," said Johnson, "a good market hunter down here shot an average of 100 birds a day and thought nothin' of it. On an average good day he bagged between 140 and 150 birds. And it is no exaggeration to say that 25 to 30 birds was a poor day's shootin'."

The old-time market hunter from Louisiana knew what he was talking about. He killed and sold about 10,000 wild game birds each season between 1902 and 1911 and was considered one of the most successful market hunters in the bayous and swamps of the Mississippi delta.

"I killed more than 1,000 waterfowl in 1 week and shipped the whole lot to New Orleans for $2.40 a dozen, or $.40 a pair. That was the largest number of ducks I ever bagged in 1 week."

Market Hunting

- Bison (Late 1830-1900)
  - Railroad to west (1860s)
  - 2 million bison killed in southern herd (1870s)
  - Industrial revolution + tanning process = industrial belts (1870s)
  - Bison bones for sugar, fertilizer, and fine china
    - 1868 – 1881 (31 million bison through Kansas railroad)
  - 1872 – 5,000 bison / day killed

Market Hunting

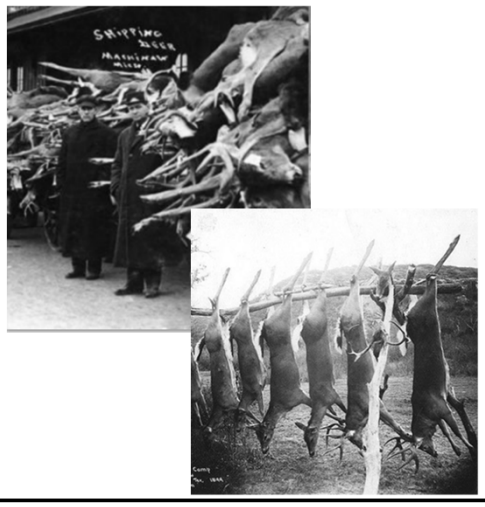
- Bison (Late 1830-1900)
  - 1873
    - $1.25 / hide
    - $0.25 / tongue
  - 1874 – 200,000 hides/day
  - 1880 – northern herd hunting begins
  - 1881 – 1 Montana county = 180k hides
  - 1882 – 10,000 bison killed in 3 days in Dakota territory
  - 1884 – All wild bison are gone (except for 26 in Yellowstone National Park

Wildlife Legal Protection

- 1871 – US Fishery Commission
- 1880 – All US States had game laws
- 1885 – Bureau of Biological Survey
- 1892 – First Game Warden Convention
  - Creation of uniform state game laws

Wildlife Protection (Western US)

- Lacey Act (1900)
  - Bans sale of wildlife (and later plants)
- Audubon Society (1905)
  - Game bird protection
- Migratory Bird Treaty Act (1918)
  - Bans sale of migratory birds



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Paying the Bills

- Pittman-Robertson Act (1937)
  - Formally: Federal Aid in Wildlife Restoration Act
  - Tax on firearms and ammunition
  - Today - $300 million - $800 million
- Dingel-Johnson Act (1950)
  - Tax on fishing equipment and gear, motorboat fuel & motors
  - Formally: Federal Aid in Sport Fish Restoration Act
  - Today - $350 + million

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Paying the Bills

- Pittman-Robertson Act (1937)
  - $8 Million -> Hunter Education
  - $3 Million -> Inter-state projects
  - ½ of Handgun tax -> Hunter Education
  - Remainder
    - 50% To states -> Area of State/ Area U.S.
    - 50% To states -> State Hunting licenses/U.S. Licenses

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Today's Wildlife Landscape

Multi-Use Sustained-Yield
- Outdoor Recreation
- Range
- Timber
- Watershed
- **Fish & Wildlife**

F&W Conservation
- **Wildlife ranges**
- **Games ranges**
- WMAs
- Waterfowl production
- Other compatible uses

Multi-Use Sustained-Yield
- Outdoor Recreation
- Range
- Timber
- Watershed
- **Fish & Wildlife**

Preservation
- **Maintain natural/cultural resources**
- Provide enjoyment

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Today's Wildlife Landscape

GEORGIA DEPARTMENT OF NATURAL RESOURCES
WILDLIFE RESOURCES DIVISION

Wildlife Management Areas
- **Wildlife Conservation**
- **Hunting/Fishing**
- Recreational Activities

Private Property
- Multiple use
- **Hunting/Fishing**
- Recreational Activities
- Timber
- Etc.

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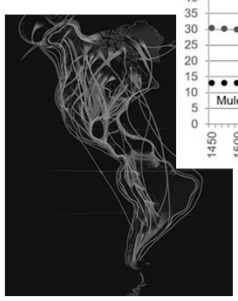
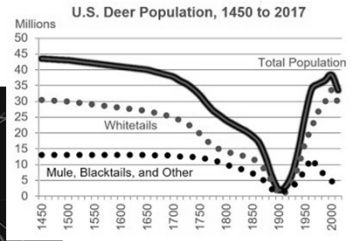
Managing Forests for Wildlife

- You can't manage this!





- You can manage THIS!

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Step 1: A "Healthy Forest"

- What is that….. Its "The ability of a forest to maintain and perpetuate a constant high-quality supply of environmental benefits, products, and diverse plant and animal community"

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Wildlife Indictors of Forest Health

- Health forests grow healthy wildlife populations
- The absence of wildlife populations is a major indicator of declining forest health
- Use wildlife as a tool… a "barometer" of forest health

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Forest Health Indicators

- Indicator species = a species used as gauge for the condition of a particular habitat, community, or ecosystem

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Wildlife of Upland Forests

- Common Wildlife in Upland Forests
  - Mammals
    - White-tailed deer
    - Eastern cotton-tail rabbit
    - Gray/Red fox
    - Squirrels
    - Striped skunk
    - Coyote

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Wildlife of Upland Forests

- Common Wildlife in Upland Forests
  - Birds
    - Eastern wild-turkey
    - Northern bobwhite
    - Red-cockaded woodpecker
    - Pine warbler
    - Prairie warbler
    - Grasshopper sparrow
    - Henslow's sparrow




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Wildlife of Upland Forests

- Common Wildlife in Upland Forests
  - Reptiles and Amphibians




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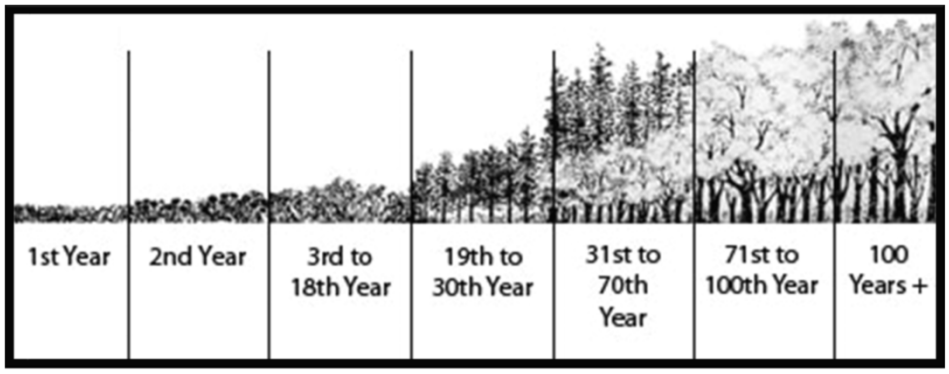
Management of Succession

- What is Succession?



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Habitat Development: Young Clearcuts

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1. Annuals, Grasses (ragweed, fireweed, horseweed, lespedeza, etc)
2. Perennials, legumes (broomsedge, desmodium, lespedeza, pokeweed, dogfennel, etc)

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3. Blackberries, broomsedge, pines, (hardwoods)

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5-7 Blackberries, broomsedge, pines, etc

8+ Canopy Closure

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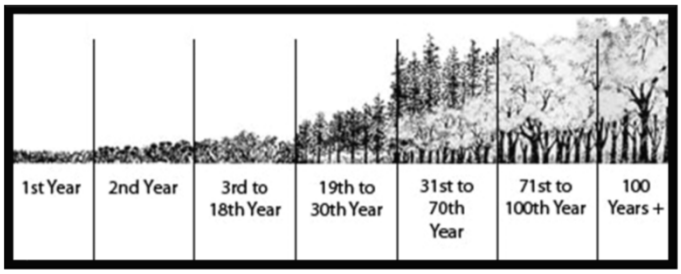
Management of Succession

- What is Succession?
  - 3rd to 18th year: Grass scrub community; broomsedge grass, pines coming in during this stage
  - 19th to 30th year: Young pine forest
  - 30th to 70th year: Mature pine forest; understory of young hardwoods 70th to 100th year: Pine to hardwood transition
  - 100th year plus: Climax oak-hickory forest



Forest Management

- Thinning
  - Inevitable
  - Risks of not thinning
  - Competing objectives
  - Wildlife response
    - Deer
    - Turkey
    - Quail
    - Songbirds
    - Herpetofuana

Thinning

- Good for Forest Health
- Good for Wildlife

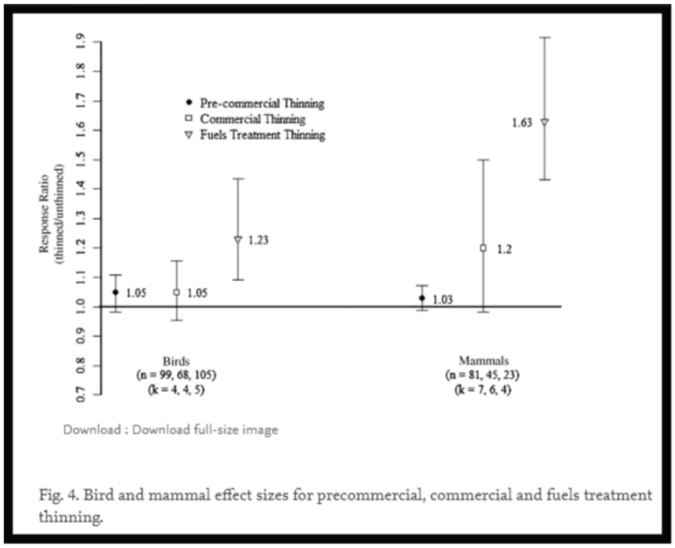


Fig. 4. Bird and mammal effect sizes for precommercial, commercial and fuels treatment thinning.

Verschuyl et al. 2010

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Thinning

- Directly Influences understory
- Heavier thing = more sunlight
- Many beneficial wildlife plants are intolerant of shade

- Basal Area
  - Turkey 60-90 ft^2/acre
  - Quail < 65 ft^2/acre

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Thinning

- Wildlife Response
  - Increased soft mast production
    - American Beautyberry
    - Blackberry
    - Blueberry
    - Persimmon

Thinning

- Wildlife Response
  - More cover
  - More forage
  - More soft mast
  - More browse
  - Increased nutrition
  - Increased palatability

Thinning

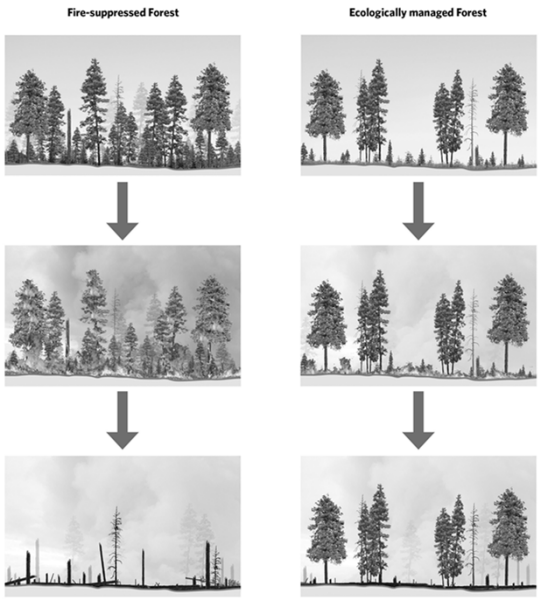
- Wildlife Response
  - Better bedding cover for fawns
  - Better nesting and brooding habitat for quail and turkeys
  - Better forage for deer
  - Increased plant diversity
  - Increased avian diversity
  - Increased insect diverity

Fire

- Integral part of southeastern pine ecosystems.
- Periodic fire (2-5 yr) controls hardwood invasion, maintains open midstory, and stimulates herbaceous ground cover of forbs and grasses.

Prescribed Fire

- Good for Forests
- Good for Wildlife



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Prescribed Fire

- Prescribed Fire
  - Different historic fire frequencies
  - Timing
  - Frequency
  - Considerations
    - Rainfall
    - Soil productivity

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Prescribed Fire

- Prescribed Fire
  - Wildlife Response
    - Deer
    - Turkeys
    - Quail
    - Songbirds
    - Herpetofauna

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Prescribed Fire

- Prescribed Fire
  - Most important tool
  - Natural part of southern ecosystems
  - Resets plant succession, controls hardwoods
  - Shapes understory structure and composition

*** Fire without thinning may not produce desired results

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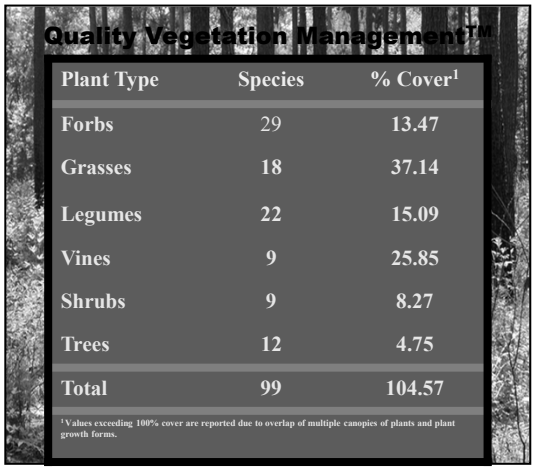
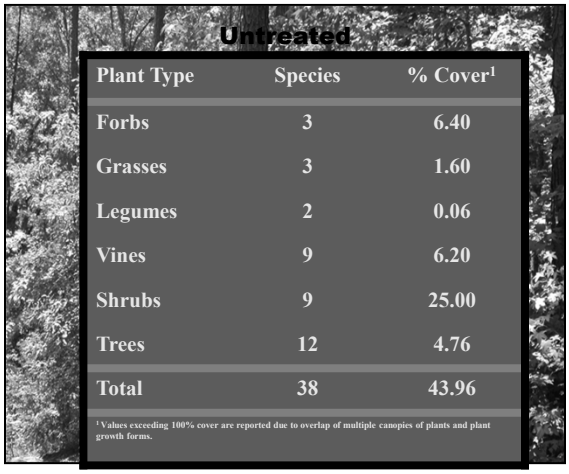
Herbicide Treatment



Quality Vegetation Management™

Plant Type	Species	% Cover[1]
Forbs	29	13.47
Grasses	18	37.14
Legumes	22	15.09
Vines	9	25.85
Shrubs	9	8.27
Trees	12	4.75
Total	99	104.57

[1] Values exceeding 100% cover are reported due to overlap of multiple canopies of plants and plant growth forms.



Untreated

Plant Type	Species	% Cover[1]
Forbs	3	6.40
Grasses	3	1.60
Legumes	2	0.06
Vines	9	6.20
Shrubs	9	25.00
Trees	12	4.76
Total	38	43.96

[1] Values exceeding 100% cover are reported due to overlap of multiple canopies of plants and plant growth forms.

Monitoring for Wildlife – Wildlife Cameras

- Types of Cameras
- Camera Settings
- Capture Modes
- Capturing Wildlife

Wildlife Cameras

BROWNING
RECONYX
STEALTH CAM
Cuddeback Digital
MOULTRIE
Wildgame Innovations
SPYPOINT
Bushnell
SPARTAN CAMERA
REVEAL CELLULAR CAMERA TACTACAM

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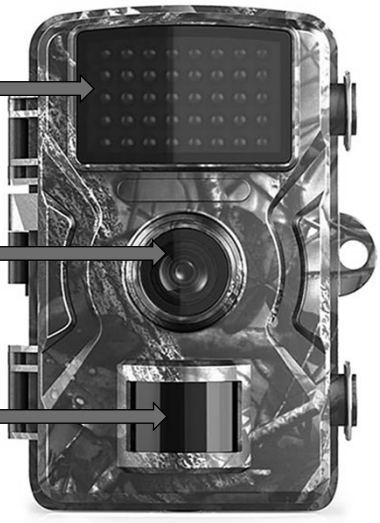
Wildlife Cameras

Flash

Camera Lens

Motion Sensor



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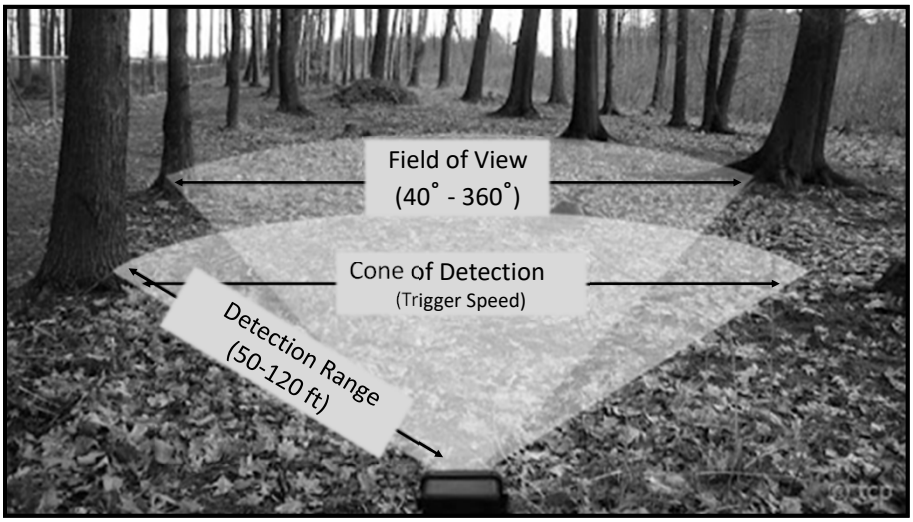
Yellow Cone = Camera Lens
White Cone = Motion Sensor



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Types of Flash

White Flash

Infrared (IR) Flash

IR "black" Flash

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Types of Flash

Highest Image Quality ⟷ Lowest Image Quality

Wildlife Awareness?

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Attractants (≥ 2-minute delay)

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Attractants – pros and Cons

Short-term use = fewer negative effects

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Passive Cameras (≤ 1-minute Delay)

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Placement

- Low-use Roads

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Placement

- Low-use Roads
- Natural Food Sources

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Placement

- Low-use Roads
- Natural Food Sources
- Water Sources

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