

# WILDLIFE MANAGEMENT OF LESS TRADITIONAL SPECIES



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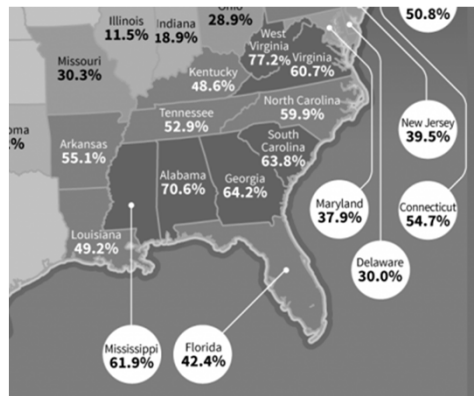
## Forest Management = Biodiversity

- 90% of forests in the southeastern US are privately owned

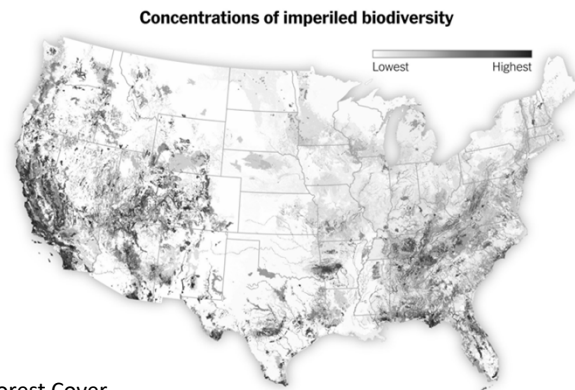
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## Forest Management = Biodiversity

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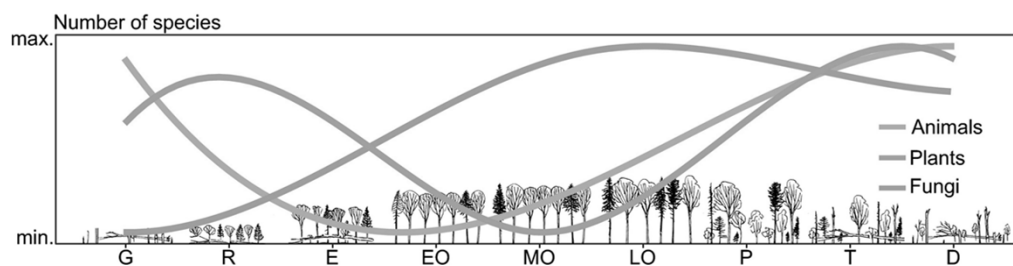
% Forest Cover



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## Forest Management = Biodiversity

- Biodiversity response to active forest management varies by species
  - Influenced by past land use
  - Influenced by surrounding landscape features
  - Driven by multiple scales of management (property → landscape)

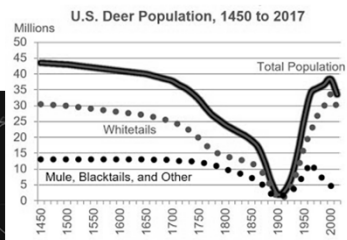
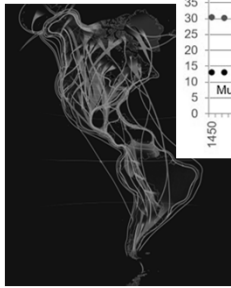


doi/10.1111/1365-2664.13238

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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”

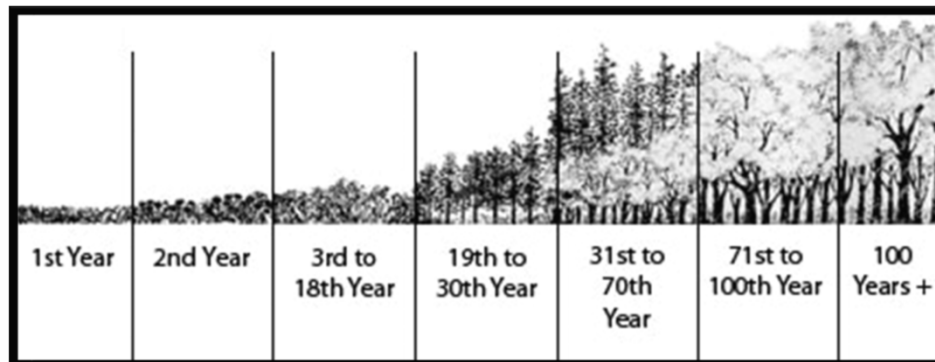
- What is that..... Its “The ability of a forest to maintain and perpetuate a constant high-quality supply of environmental benefits, products, and diverse plant and animal community”



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## Management of Succession

- What is Succession?



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## Habitat Development: Young Clearcuts

qQ\$H «u • Q#Z<sup>3</sup>/Z<sup>3</sup>/<sub>4</sub>

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



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## Habitat Development: Young Clearcuts

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3. Blackberries, broomsedge, pines, (hardwoods)



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## Habitat Development: Young Clearcuts

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2. Perennials, legumes (broomsedge, desmodium, lespedeza, pokeweed, dogfennel, etc)

3. Blackberries, broomsedge, pines, (hardwoods)

5-7 Blackberries, broomsedge, pines, etc

8+ Canopy Closure



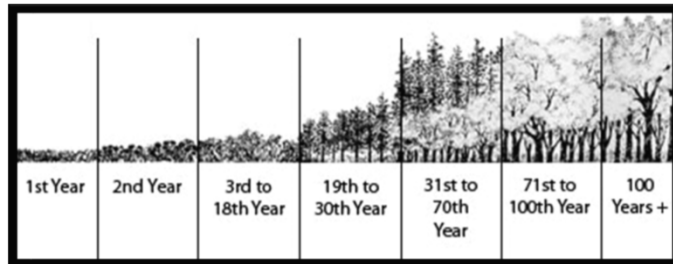
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## Management of Succession

### • 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



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## Forest Management

### • Thinning

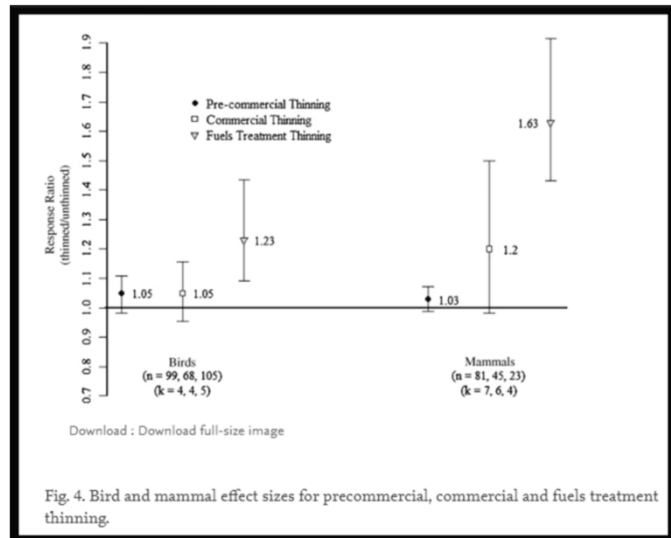
- Inevitable
- Risks of not thinning
- Competing objectives
- Wildlife response
  - Deer
  - Turkey
  - Quail
  - Songbirds
  - Herpetofuana



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## Thinning

- Good for Forest Health
- Good for Wildlife



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<sup>2</sup>/acre
  - Quail < 65 ft<sup>2</sup>/acre

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## Thinning

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



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## Thinning

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



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## 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 diversity



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## 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.



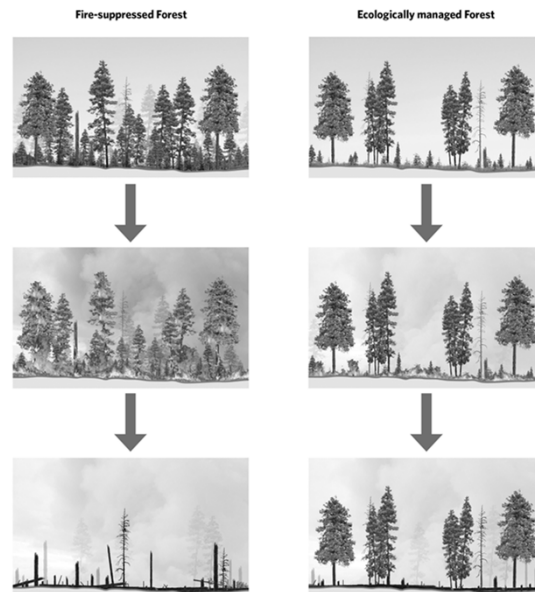
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## Prescribed Fire

- 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

Plant Type	Species	% Cover <sup>1</sup>
Forbs	29	13.47
Grasses	18	37.14
Legumes	22	15.09
Vines	9	25.85
Shrubs	9	8.27
Trees	12	4.75
<b>Total</b>	<b>99</b>	<b>104.57</b>

<sup>1</sup>Values exceeding 100% cover are reported due to overlap of multiple canopies of plants and plant growth forms.

Plant Type	Species	% Cover <sup>1</sup>
Forbs	3	6.40
Grasses	3	1.60
Legumes	2	0.06
Vines	9	6.20
Shrubs	9	25.00
Trees	12	4.76
<b>Total</b>	<b>38</b>	<b>43.96</b>

<sup>1</sup>Values exceeding 100% cover are reported due to overlap of multiple canopies of plants and plant growth forms.

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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

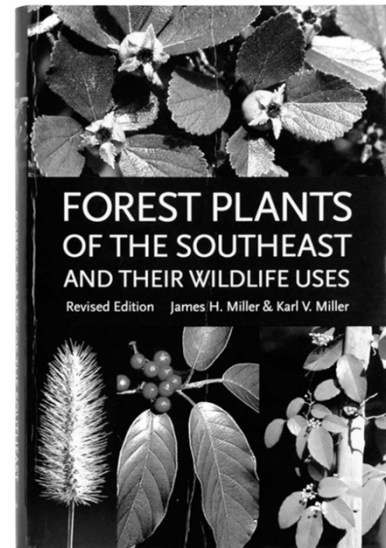
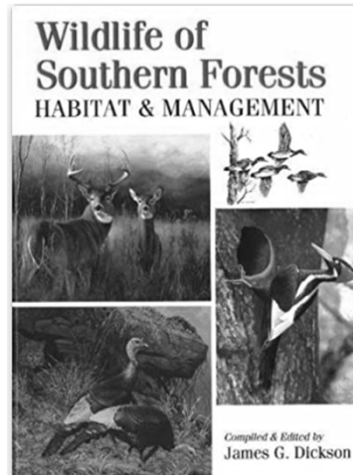
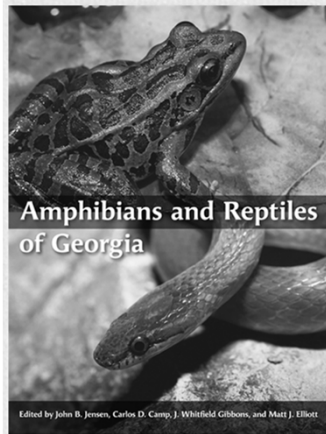


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## Resources For My Property



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## How to Manage My Property

### **DEVELOPING A WILDLIFE MANAGEMENT PLAN**

Factsheet | HGIC 2901 | **Published:** Aug 27, 2018 | Print

Who would consider building a house without a blueprint or taking a trip without a road map? Land managers and landowners who are successful at managing wildlife carefully plan and target management activities to accomplish their objectives, minimize expenses, and ensure the long-term productivity of their property for wildlife and other resources. Wildlife management plans are simply written guides for how, when, and where to implement habitat improvement practices. Developing a management plan personally, or contracting a natural resource professional to develop a plan for forest or farm land, is a wise investment of time and money.

<https://hgic.clemson.edu/factsheet/developing-a-wildlife-management-plan/>



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## The Process

### 1. Identify Management Objectives for Property

- The first and most important step in developing a management plan is to clearly define, in writing, wildlife habitat management objectives and expectations.
- Objectives should be as specific as possible and include wildlife species to be managed as well as the expected outcome.
- Landowners also need to consider how their wildlife management objectives fit with other land use objectives such as farming or timber operations.



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## The Process

### 1. Identify Management Objectives for Property

Management Objectives (includes priorities for wildlife, timber and other land uses)	
Wildlife	_____
	_____
Timber	_____
	_____
Other	_____
	_____



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## The Process

### 2. Conduct Resource Inventory

- Identify, locate, and record land and other physical characteristics that have a potential to support wildlife or meet other land management objectives.
- A survey of the property will determine availability and quality of existing habitat and the potential for improvement.



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## The Process

### Compartment Characteristics:

Soil type and capabilities\_\_\_\_\_

Drainage\_\_\_\_\_

Tree species composition\_\_\_\_\_

Trees per acre\_\_\_\_\_

Mast-Producing Trees\_\_\_\_\_

Fruit-bearing shrubs & herbaceous plants\_\_\_\_\_

Den Trees & Snags\_\_\_\_\_

Specific wildlife habitat information\_\_\_\_\_ Site index\_\_\_\_\_

Aspect\_\_\_\_\_

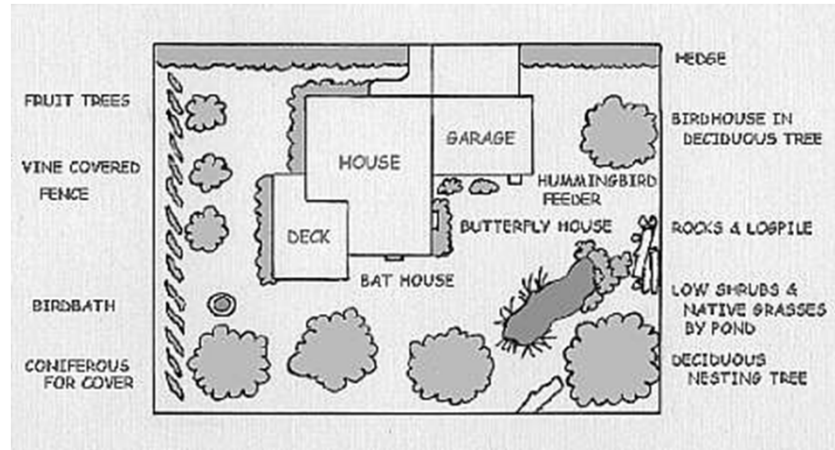
Volume/basal area of timber\_\_\_\_\_

Mean DBH (diameter of tree at breast height)\_\_\_\_\_



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# The Process



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# The Process

## 3. Revisit and Modify Objectives (if necessary)

**Management Objectives** (includes priorities for wildlife, timber and other land uses)

Wildlife \_\_\_\_\_  
 \_\_\_\_\_

Timber \_\_\_\_\_  
 \_\_\_\_\_

Other \_\_\_\_\_  
 \_\_\_\_\_

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## The Process

### 4. Designate Management Compartments

- Land tracts should be divided up into management units called “compartments” to make the process of recommending and conducting habitat improvement practices over a large and diverse area easier and more efficient.
- Compartments may be a pine plantation, hardwood stand, swamp, riparian forest, old home site, or any particular field or field system.

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## The Process

### 5. Record Objectives and Descriptive Information by Compartment



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## The Process

### 6. Select Habitat Improvement Practices and Schedule of Activities by compartment

- After the current conditions and management potential of each compartment are determined, habitat improvement practices should be reviewed and selected for each compartment.
- Write down practices that would be most appropriate for the land, and then discuss them with a natural resource professional (a certified wildlife biologist or registered forester).
- When considering management alternatives, be sure to consider the impacts of each practice, timing, costs, and the potential for each practice to complement or conflict with on-going land management operations on the tract and adjacent tracts managed by others.



## The Process

### 7. Implement Management Practices by Compartment

Activities to be conducted (in a calendar year from start to finish)

- 1.
- 2.
- 3.



## The Process

### 8. Record Keeping and Evaluation

- Management plans are dynamic documents that should be evaluated and updated periodically.
- Evaluations should be made annually for each compartment so that effective practices can continue to be implemented, while those that produce few or no results can be modified or discarded.
- Recording impacts of management efforts on compartment sheets is important in helping to evaluate the effectiveness of certain management practices.



## The Process

### 8. Record Keeping and Evaluation

- Keeping a log book of observations and changes that occur in compartments can also provide valuable information for evaluating management efforts.
- Recorded observations should include estimates of vegetative responses to management practices as well as wildlife responses, such as deer and turkey use of food plots.
- There is no substitute for good record keeping as a basis for evaluating the effectiveness of wildlife management practices.



# The Process

## 8. Record Keeping and Evaluation

Activities to be conducted (in a calendar year from start to finish)

- 1.
- 2.
- 3.

Record of wildlife, timber and other management activities:

Activity Year \_\_\_\_\_

Impact of Management \_\_\_\_\_

Activities \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# The Process

## 9. Refine Management Practices Based on Results

1. General Description of the Entire Property: Includes a brief description of the entire property such as location in the county, number of acres, past and current land uses, general forest and vegetation conditions, and number of compartments.
2. Land Use and Management Objectives: Includes a priority listing of wildlife and other land use and management objectives. This section should also include a brief index of each compartment's management objectives.
3. Sketch Map: Provides a visual description (sketch) of the property. May include several maps such as 1) a base map that shows boundaries, roads, and other man-made features; 2) a type map that differentiates cover types (timber stands, agricultural fields, and open fields); 3) a soils map that shows the location of different soil types; and 4) a compartment map that indicates where habitat improvement practices have or will take place.
4. Compartment Record Sheets: Contains descriptive information and wildlife habitat improvement recommendations for each compartment. Also includes a schedule of recommended management activities for the compartment for a 10-year period.
5. Field Notes Section: Provides a commentary of impacts of management activities and wildlife observations taken directly from log books and archived in the three-ringed binder. The most appropriate method for storing field notes is by compartment.
6. Resource Materials Section: Contains copies of aerial photographs, topographic and soil maps used to draw the base map. This section should also include reference materials such as bulletins, leaflets, and articles on wildlife habitat management. The names, addresses, and telephone numbers of resource professionals who helped prepare the management plan and who will be conducting management practices should be included here.



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## Monitoring for Wildlife – Wildlife Cameras

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



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## Wildlife Cameras



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## Wildlife Cameras

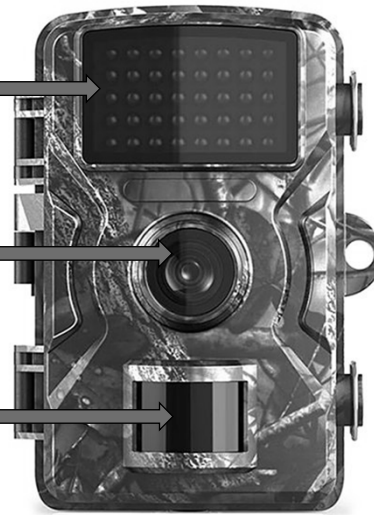
Flash



Camera Lens



Motion Sensor



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Yellow Cone = Camera Lens  
White Cone = Motion Sensor

The diagram shows a trail camera on a forest floor. A yellow cone represents the camera lens, and a white cone represents the motion sensor. The white cone is wider and extends further than the yellow cone. Labels indicate:
 

- Field of View (40° - 360°)**: The horizontal range of the camera's view.
- Cone of Detection (Trigger Speed)**: The area covered by the motion sensor.
- Detection Range (50-120 ft)**: The distance from the camera to the edge of the motion sensor's cone.

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## Types of Flash

White Flash

A trail camera with a white flash unit mounted on top. The camera is in a camouflage case with the 'BolyGuard' logo at the bottom.

Infrared (IR) Flash

A trail camera with a row of small infrared LEDs for flash. It has a digital display at the bottom showing '08:18'.

IR "black" Flash

A trail camera with a large, dark, rectangular opening for the flash, designed to be less visible to animals.

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## Types of Flash



Highest Image Quality

Wildlife Awareness?

Lowest Image Quality



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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 ( $\leq$ 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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