Wildlife Forestry in the Lower Mississippi Valley aka "Desired Forest Conditions for Wildlife (DFCWs)

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Louisiana Department of Wildlife and Fisheries

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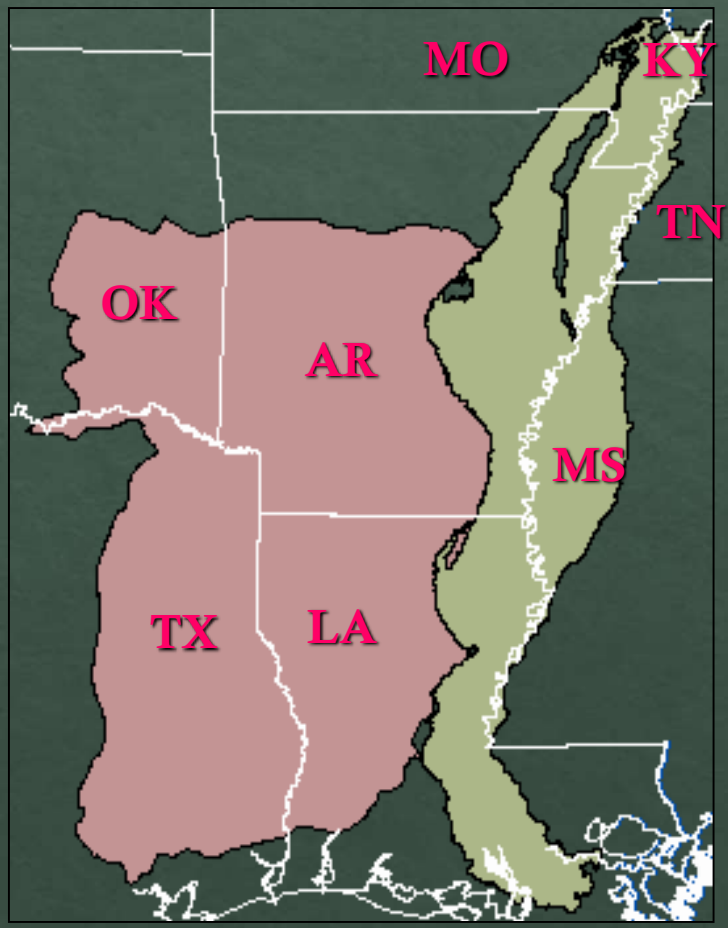
The Lower Mississippi Valley Joint Venture

- The LMV Joint Venture is a self-directed, non-regulatory conservation partnership that exists for the purpose of implementing the goals and objectives of national and international bird conservation plans



Implications to Restoration and Management of Bottomland Hardwood Forests

Looking back in time….

Long history of forest management, but rarely has management prescriptions been explicitly linked to wildlife habitat needs via specific forest metrics.

2001 – National Wildlife Refuge System initiated Biological Reviews

Biologists would say…"we need more Swainson's Warbler habitat"….

Forester would say…"what does that look like"?

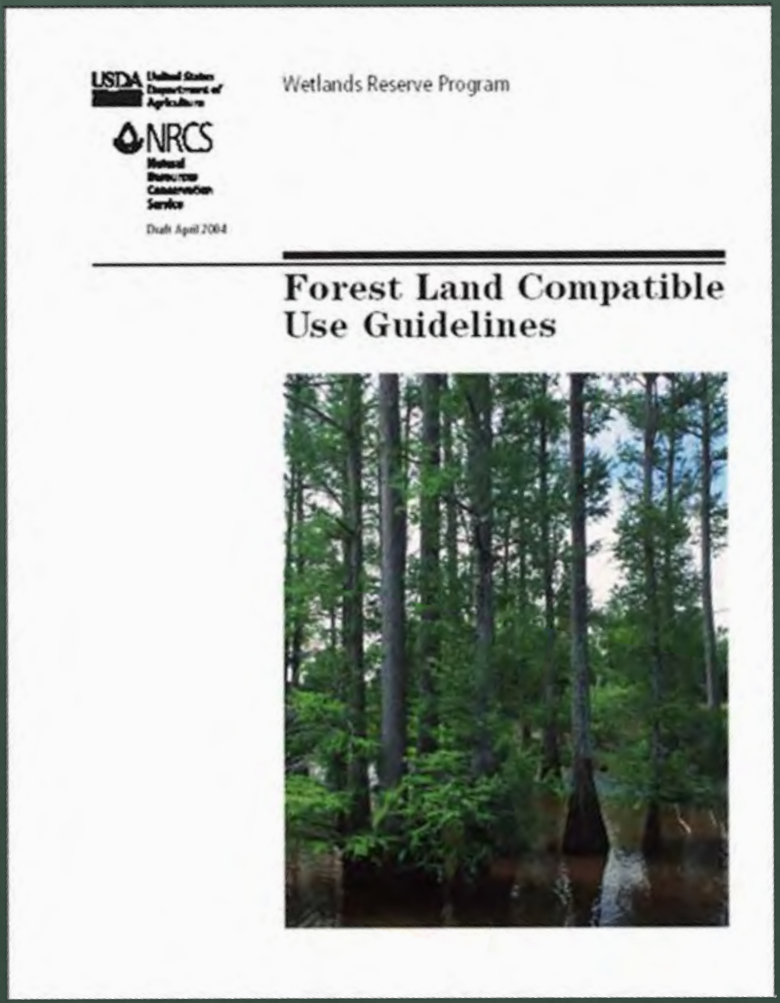
2002 – USDA Natural Resource Conservation Service asked the U.S. Fish and Wildlife Service for assistance in terms of how to manage extant blocks of bottomland hardwood forest being enrolled in the Wetland Reserve Program (WRP) with an emphasis on wildlife habitat.

Joint Workshop in Vicksburg, MS – November 5-7,2002

A working group was formed to draft a white paper that addressed forest management as it related to enhancing wildlife habitat.

The white paper, subsequently resulted in…

NRCS-WRP Forest Land Compatible Use Guidelines - 2004



USDA United States Department of Agriculture

NRCS Natural Resources Conservation Service

Wetlands Reserve Program

Draft April 2004

Forest Land Compatible Use Guidelines

Table 1 Desired forest conditions to meet habitat needs

Target forest conditions	Conditions that may warrant management
60%–80% **canopy** cover	>90% **canopy** cover
Basal area 70–90 ft²/acre (16–20 m²/ha)	**Basal area** >100 ft²/acre (>28 m²/ha)
60%–80% **stocking**	>100% **stocking**
Vines in overstory on 40%–60% of inventory (cruise) plots	**Vines in overstory** on <30% of inventory (cruise) plots
Super-emergent trees on 10%–20% of inventory (cruise) plots (4 to 6 super-emergent trees per acre)	**Super-emergent** trees <5% of inventory (cruise) plots (<1 super-emergent trees per acre)
Midstory canopy on 30%–60% of stand	**Midstory** canopy on <20% of stand
Vines in midstory on 50%–70% of inventory (cruise) plots	**Vines in midstory** on <30% of inventory (cruise) plots
Understory canopy cover on 40%–50% of stand	**Understory** canopy cover on <30% of stand
20%–50% **ground cover** occupancy average across inventory (cruise) plots	<20% **ground cover** occupancy average across inventory (cruise) plots
Cane present on 20%–40% of inventory (cruise) plots	**Cane** present on <20% of inventory (cruise) plots
Regeneration of **hard mast** tree species (oaks and hickories) on 30%–50% of inventory (cruise) plots	Regeneration of **hard mast** tree species (oaks and hickories) on <20% of inventory (cruise) plots
2 to 4 logs/acre that provide **coarse, woody debris**	<2 logs/acre that provide **coarse, woody debris**
4 to 6 **cavity trees** (snags) >4 inches dbh/acre	<4 **cavity trees** (snags) >4 inches dbh/acre
1 to 4 large "**den**" **trees** or "**unsound cull**" trees per 10 acres	<1 large "**den**" **tree** or "**unsound cull**" tree per 10 acres

aka…Desired Forest Conditions – version 1

Lower Mississippi Valley Joint Venture's Forest Resource Conservation Working Group

In 2004, the Lower Mississippi Valley Joint Venture Management Board created and inter-agency, inter-disciplinary working group to further investigate and address forest management as it relates to enhancing wildlife habitat.

Lower Mississippi Valley Joint Venture's Forest Resource Conservation Working Group

Task Assigned by LMVJV Management Board:

The working group will strive to ensure that conservation actions and programs of Joint Venture partners reflect reforestation and forest management prescriptions and practices that sustain populations of priority birds and other forest-dependent wildlife in concert with sustainable forestry.

Lower Mississippi Valley Joint Venture's Forest Resource Conservation Working Group

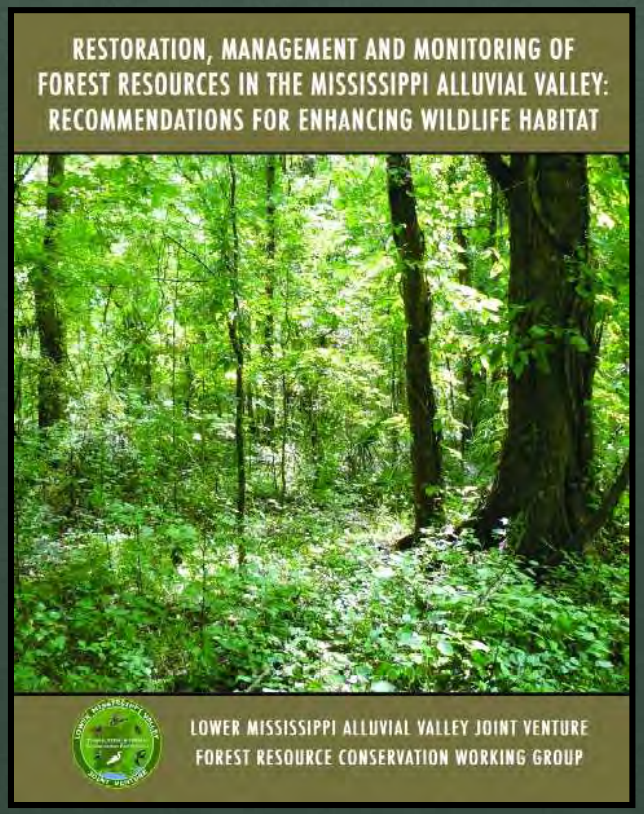
Participants included biologists, foresters, managers, and researchers.

Jim Baker, Charles Baxter, Martin Blaney, Randy Cook, Bob Cooper, Jeff Denman, Andy Dolan, Lamar Dorris, Tom Edwards, Janet Ertel, Tom Foti, Shauna Ginger, Gypsy Gooding, Paul Hamel, Chuck Hunter, Eric Johnson, Jim Johnson, Leif Karnuth, Bobby Keeland, Jamie Kellum, Chuck Klimas, David Krementz, Brian Lockhart, Larry Mallard, Jason Maxedon, Brant Miller, Allan Mueller, Elizabeth Murray, Jim Neal, Gary Pogue, Steve Reagan, Ken Reinecke, David Shoch, John Simpson, Richard Smith, Scott Somershoe, Mike Staten, Bob Strader, Kimberly Sykes, Bill Uihlien, Jon Wessman, Nancy Young, Doug Zollner, Dennis Widner, and the Louisiana Department of Wildlife and Fisheries' Forestry Section (Billy Burchfield, Cody Cedotal, Buddy Dupuy, Fred Hagaman, Wayne Higginbotham, Donald Locascio, Ed Trahan and Tommy Tuma).

Lower Mississippi Valley Joint Venture's Forest Resource Conservation Working Group

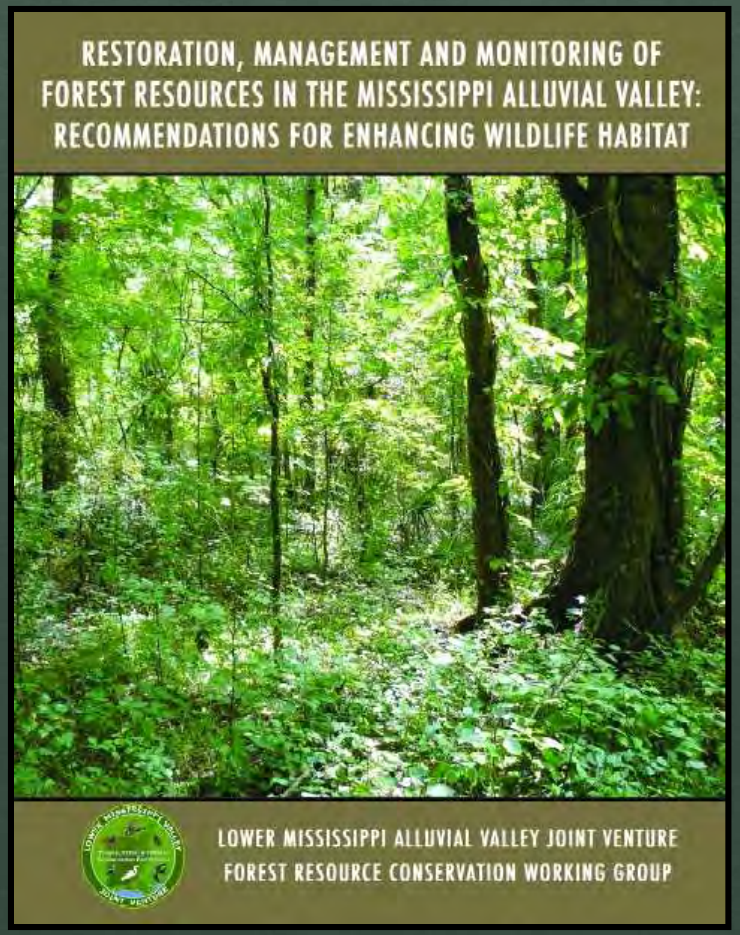
Collaboration of 56 partners from 13 organizations

"Desired Forest Conditions for Wildlife" (DFCWs)



- Anderson Tully Company
- **Arkansas Game and Fish Co**mmission
- Arkansas Natural Heritage Commission
- Louisiana Department of Wildlife and Fisheries
- Tennessee Wildlife Resources Agency
- The Nature Conservancy
- University of Georgia
- U.S. Fish & Wildlife Service
- U.S. Geological Survey, Louisiana Coop Unit
- U.S. Army Corps of Engineers
- U.S.D.A. Natural Resources Conservation Service
- U.S.D.A. Forest Service
- Winrock International

Lower Mississippi Valley Joint Venture's Forest Resource Conservation Working Group

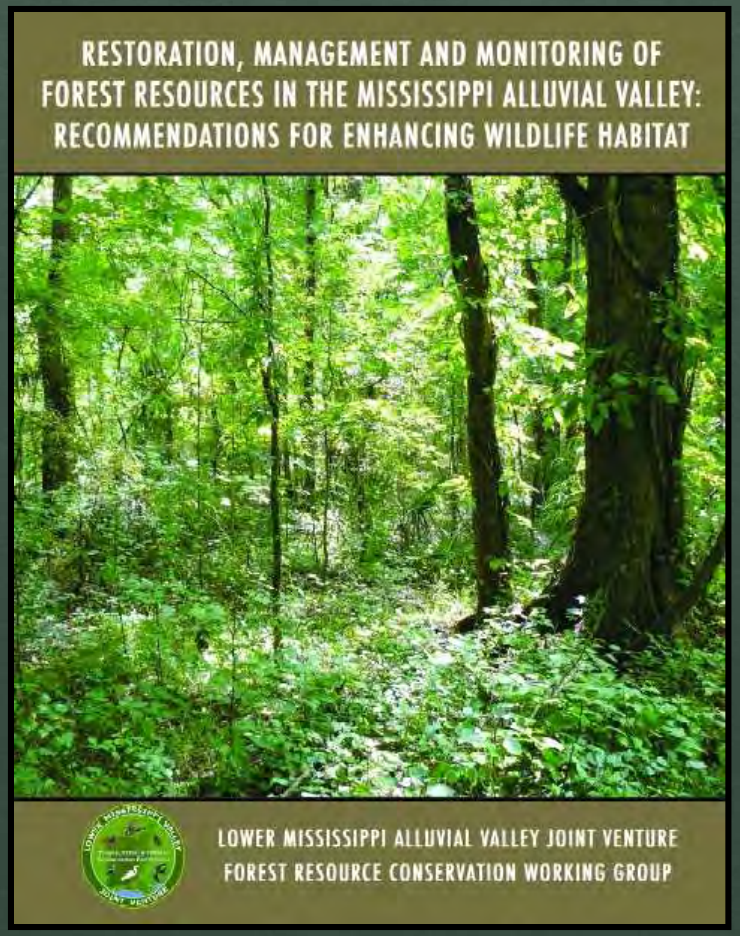


Peer Reviewed By:

SEAFWA Forest Resources Tech. Committee
Southeast Partners in Flight
Southern Group of State Foresters
Black Bear Conservation Committee
Ducks Unlimited Southern Regional Office
The Nature Conservancy – Arkansas
Mississippi Bat Working Group
Arkansas Forestry Commission
Tennessee Division of Forestry
Missouri Department of Conservation

Published in 2007

Lower Mississippi Valley Joint Venture's Forest Resource Conservation Working Group



Context Includes Overviews of:

The Mississippi Alluvial Valley

Priority Wildlife Species and Habitat Objectives

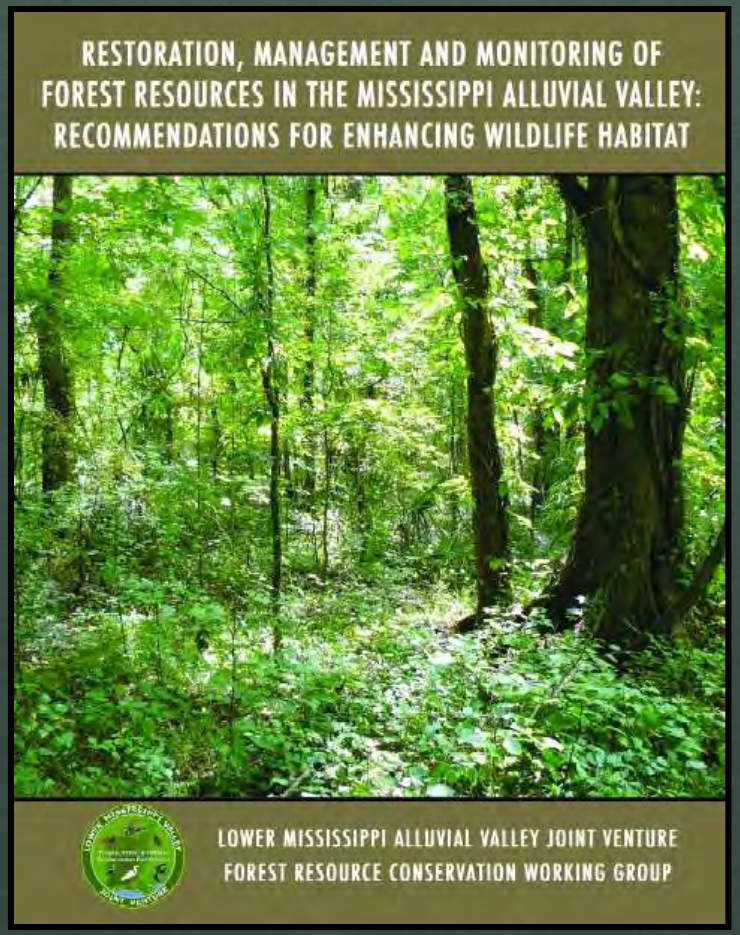
Management of Bottomland Hardwood Forests

Restoration of Bottomland Hardwood Forests

Forest Evaluation and Monitoring

Recommendations and Conclusions

Lower Mississippi Valley Joint Venture's Forest Resource Conservation Working Group



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Chapter 2. Priority Wildlife Species

Bats

Waterfowl

Bears

Forest Interior Songbirds

Reptiles & Amphibians

American Woodcock

Priority Wildlife Species: Habitat Needs

Large Cavities

Large Cavities, Dense Ground Cover, & Hard and Soft Mast

Down Woody Material

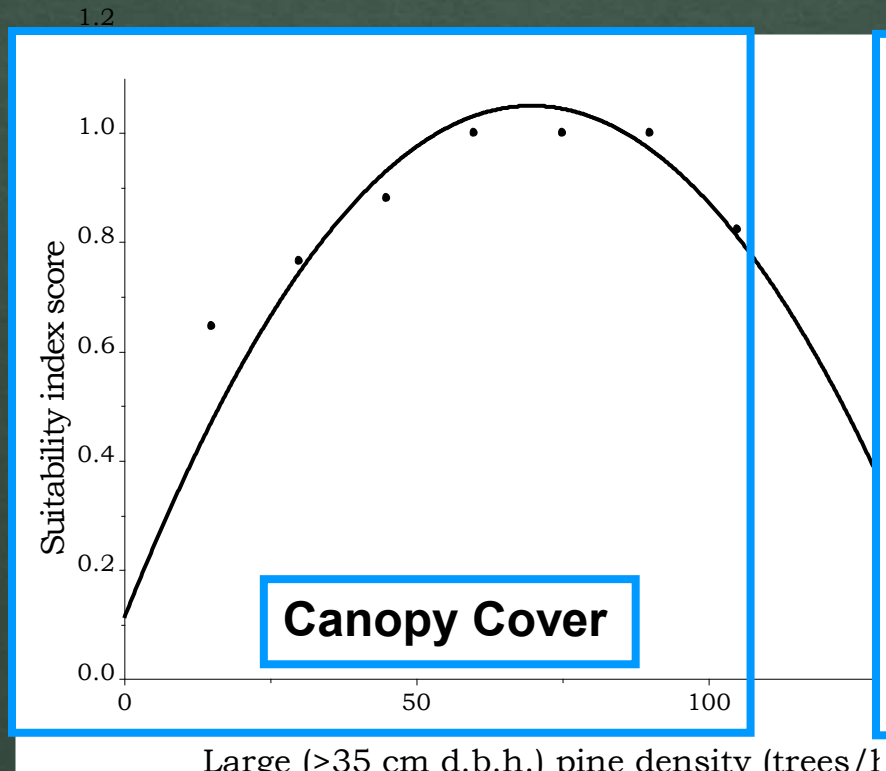
Priority Wildlife Species: Habitat Needs

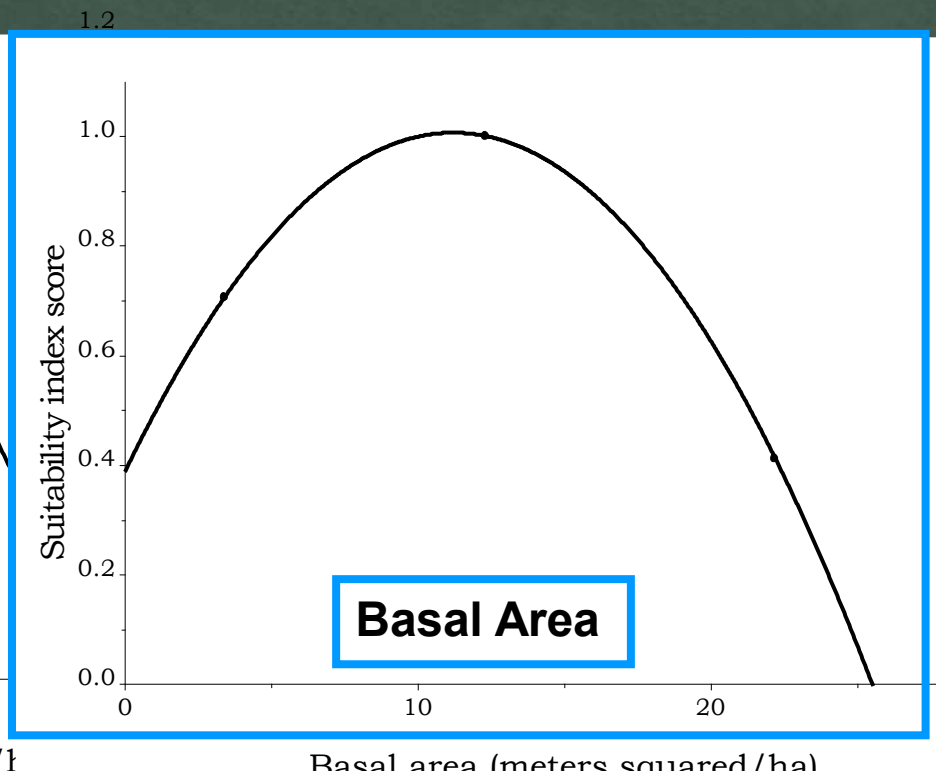
Cavities and Hard and Soft Mast

Cavities & Structural Complexity

Dense Undergrowth

Derivation of Forest Metrics





Desired Stand Conditions:

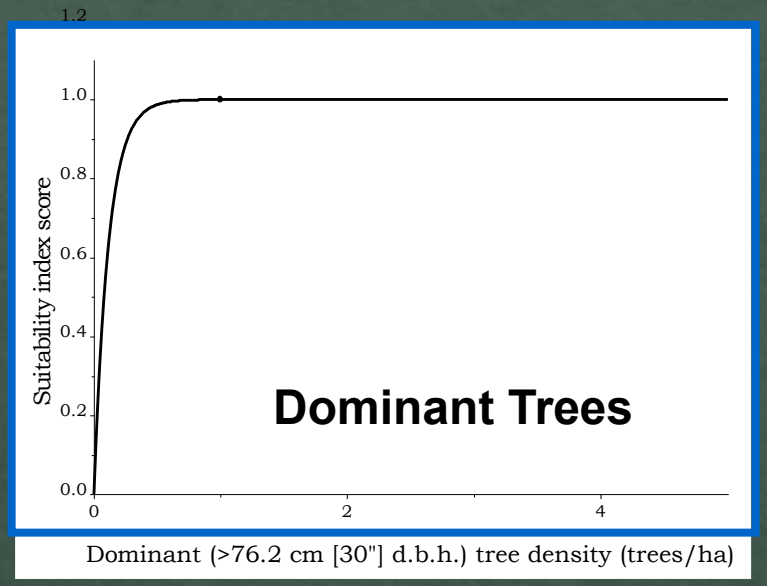
-- *Primary Management Factors* --

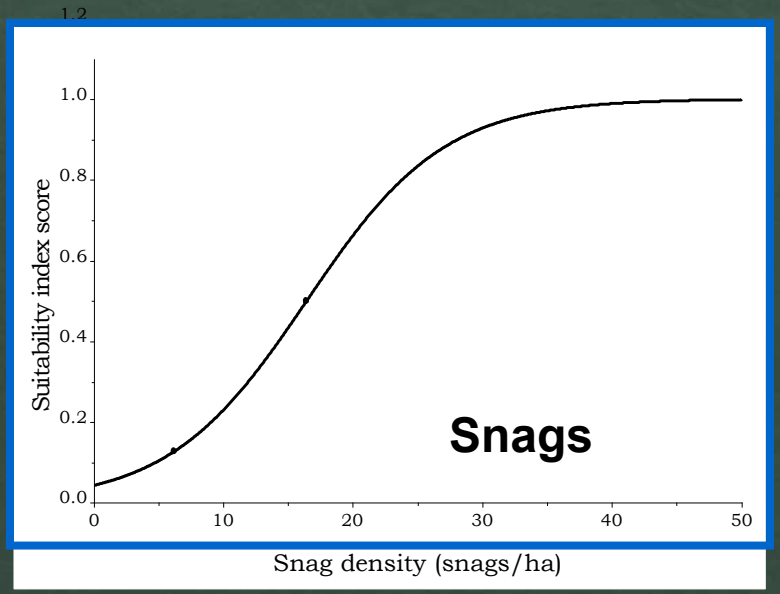
Forest Metric	Desired Stand Condition	Conditions that ***may*** warrant management
Canopy cover	60 – 70 %	≥80%
Mid-story cover	25 – 40 %	<20% or >50%
Basal area	60 – 70 ft^2/acre with ≥ 25% older age class	>90 ft^2/acre
Tree stocking	60 – 70 %	<50% or >90%

Population Sustainability =

(landscape quality) + (site quality)

Derivation of Forest Metrics

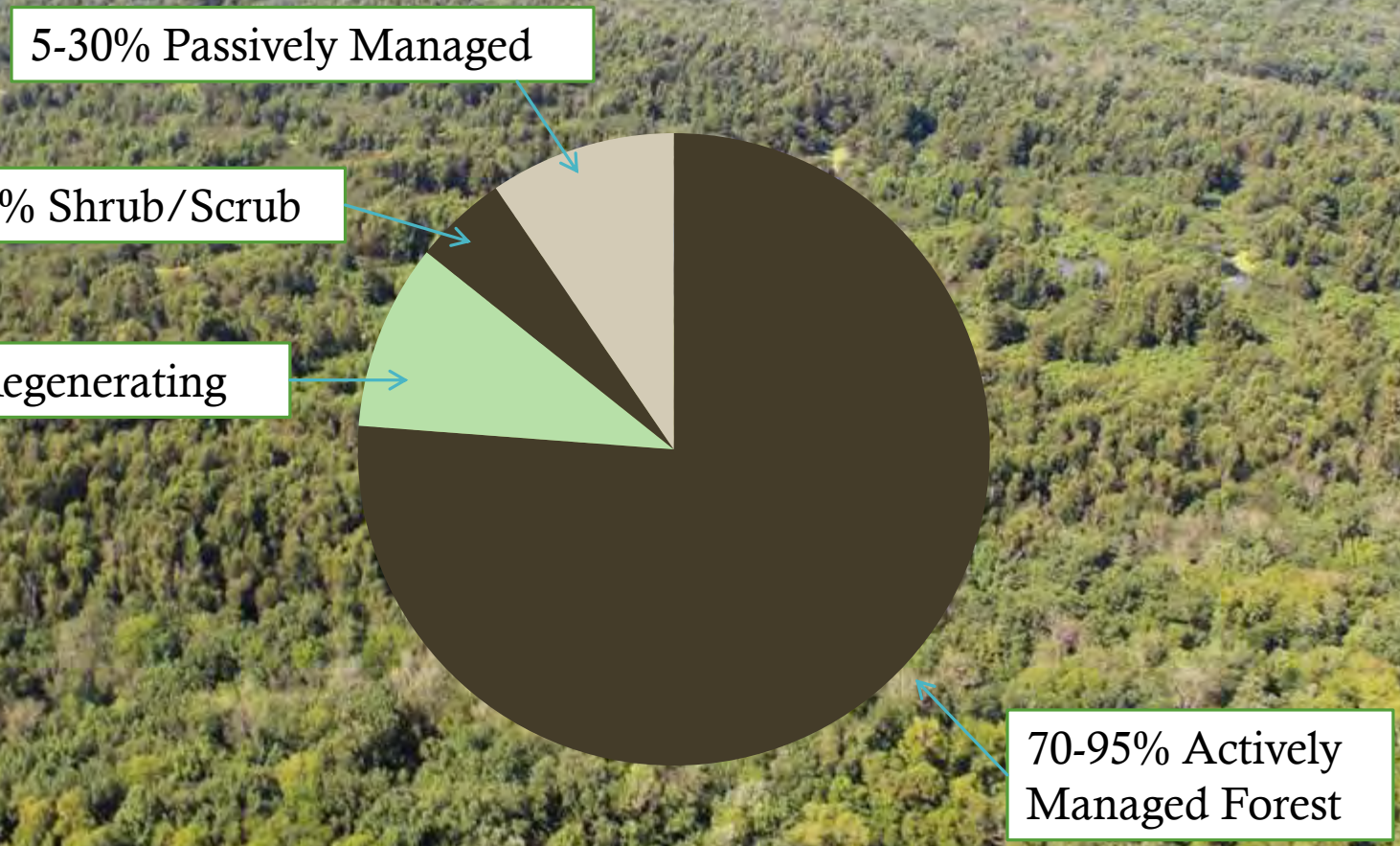




Desired Stand Conditions:
-- Secondary Management Factors --

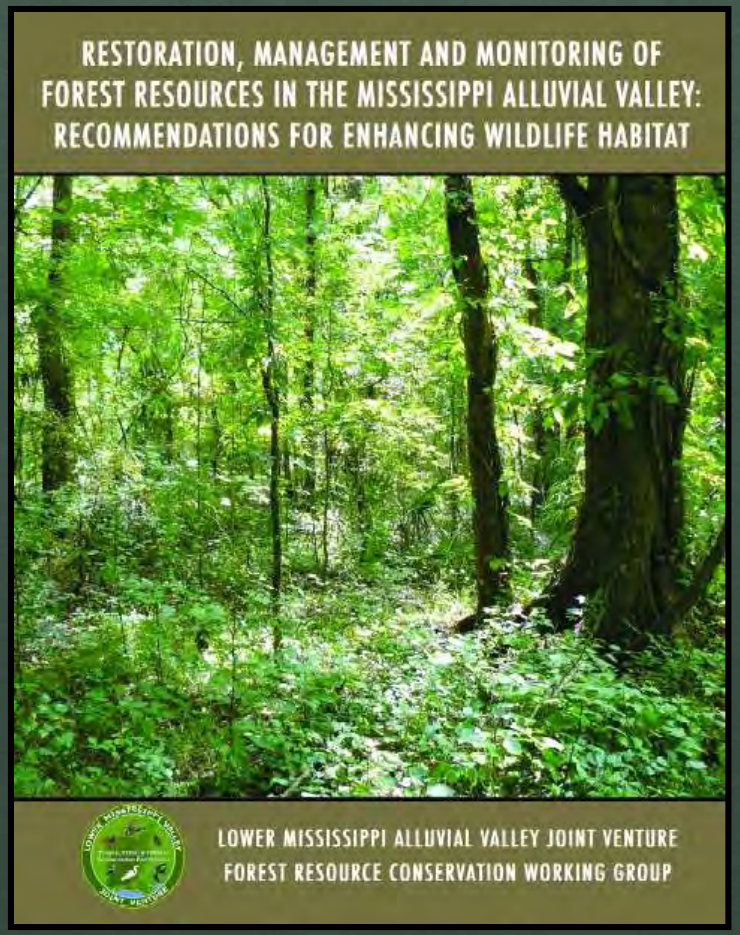
Forest Metric	Desired Stand Condition	Conditions that ***may*** warrant management
Dominant trees	>2 / acre	<1 / acre
Under-story cover	25 – 40%	<20% or >60%
Regeneration (advanced intolerant)	30-40% of area	<20% of area
Coarse woody debris	≥200 ft³ / acre	<100ft³ / acre
Small cavities (< 10"diameter)	>4 visible holes / acre	<2 visible holes / acre
Den trees (> 10" diameter)	>1 visible hole / acre	<1 visible holes / acre
Standing dead / stressed trees	>6 stems / acre >10" dbh >2 stems/ac >20" dbh	<4 stems / acre >10" dbh <1 stem/ac >20" dbh

Population Sustainability =
(landscape quality) + (site quality)



Desired Landscape Conditions

Lower Mississippi Valley Joint Venture's Forest Resource Conservation Working Group



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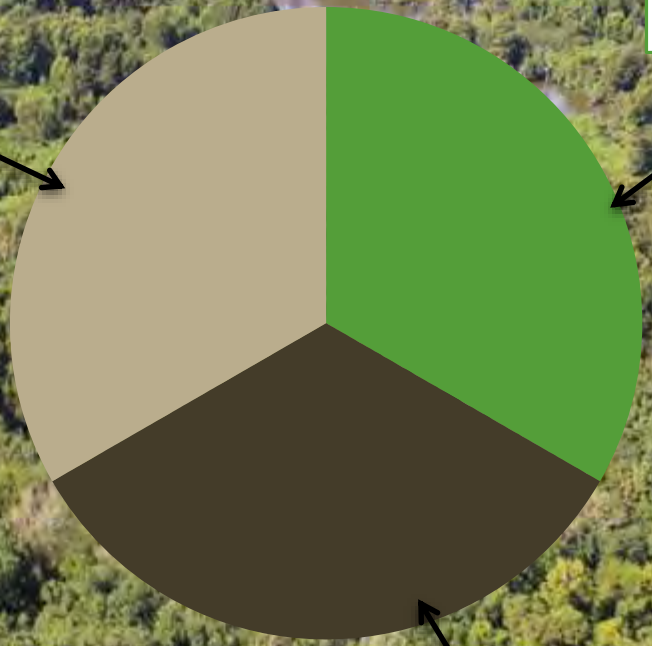
Desired Landscape Conditions

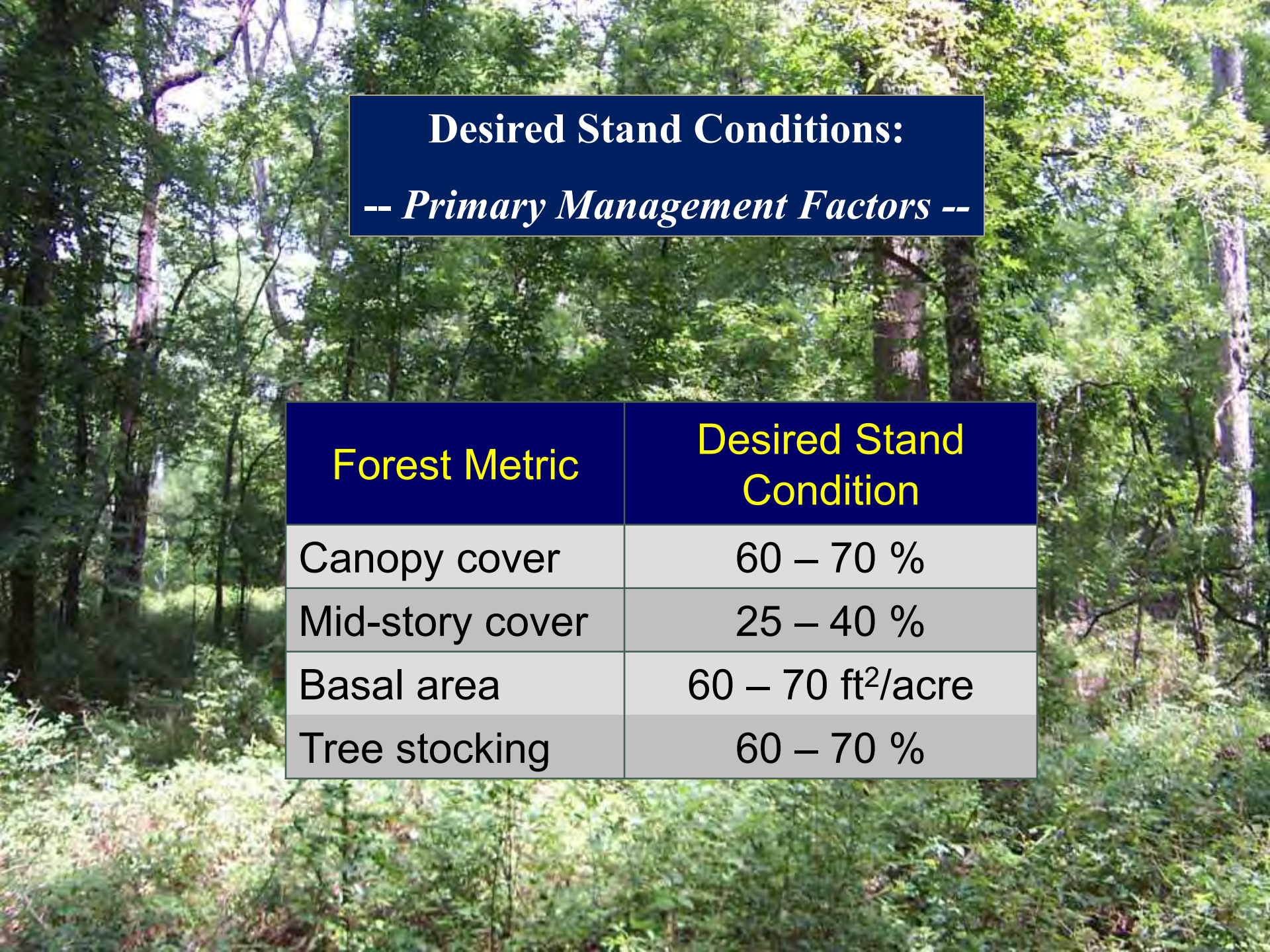
Managing on "Thirds"



Desired Stand Conditions

Goal: Develop structurally diverse forest, diverse in species, age, and diameter

There is no “Silver Bullet” Rx



Desired Stand Conditions:

-- Primary Management Factors --

Forest Metric	Desired Stand Condition
Canopy cover	60 – 70 %
Mid-story cover	25 – 40 %
Basal area	60 – 70 ft^2/acre
Tree stocking	60 – 70 %

Desired Stand Conditions:

-- *Secondary Management Factors* --

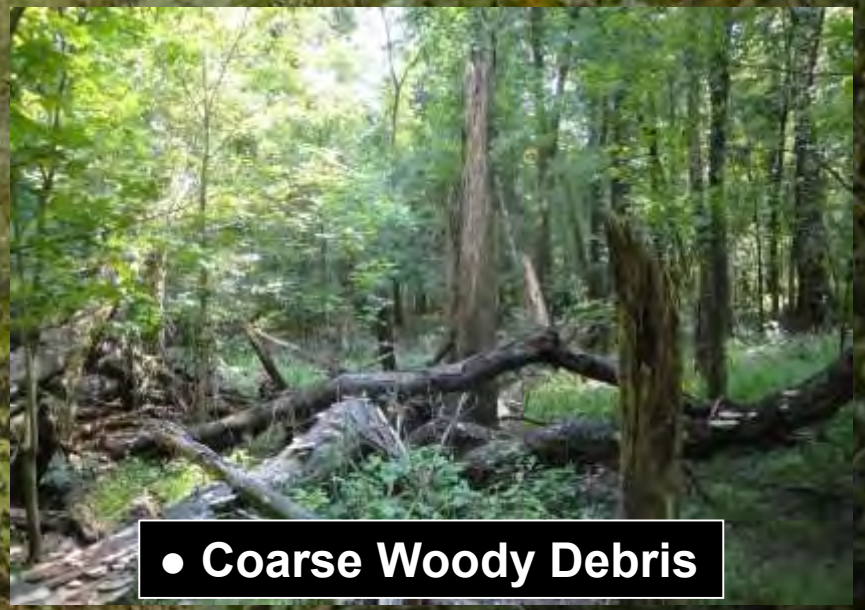
Forest Metric	Desired Stand Condition
Understory Cover	25-40%
Regeneration	30-40% of area

• Small Cavities

• Tall, Emergent Trees

• Snags

• Large Cavities



• Coarse Woody Debris

DFCW Principles:

- No rotation or cutting cycle, rather a 10-15 year evaluation cycle
- Primary and secondary factors are an average across the stand
- To attain Desired Stand Conditions disturbance is required
- Multiple treatment entries are often necessary to achieve DFCWs
- No definitive silvicultural Rx exists to guide stand development towards DFCWs
- All silvicultural tools are available to the land manager to manage a stand towards DFCWs

Successes:

- NRCS as members of the LMVJV have adopted recommendations from FRCWG for the management of WRP enrolled properties
- Duck's Unlimited has adopted recommendations for all DU easements
- LDWF, ARGF, and USFWS has adopted recommendations for all management of WMAs and Refuges in the MAV
- Many private landowners have embraced DFCWs ie. Mississippi River Landowner Alliance

Mississippi River Landowner Alliance:

- **Sept 2012, a group of 50 members of shareholder-owned hunting clubs (20 clubs) formed an alliance to represent common interests.**

- **Interests range from timber management to political advocacy.**

- **Objectives:**
  - **Provide forum for communicating timber and habitat management programs and results**
  - **Stand ready to activate a political action group**
  - **Provide forum for sharing of ideas and information**
  - **Provide field tours of various properties to demonstrate success and failures of timber management practices**
  - **Provide forum for communicating financial and technical assistance available for conservation and forest programs**

Mississippi River Landowner Alliance:

To Date:

- **50 Privately Owned Hunting Clubs**
- **300,000 acres**

Goal:

- **1,000,000 acres**

Lower Mississippi Valley Joint Venture's
Forest Resource Conservation Working Group

Habitat Management Workshops

2009-present

14 workshops

- Private landowners
- Forestry Consultants
- Federal Staff
- State Staff

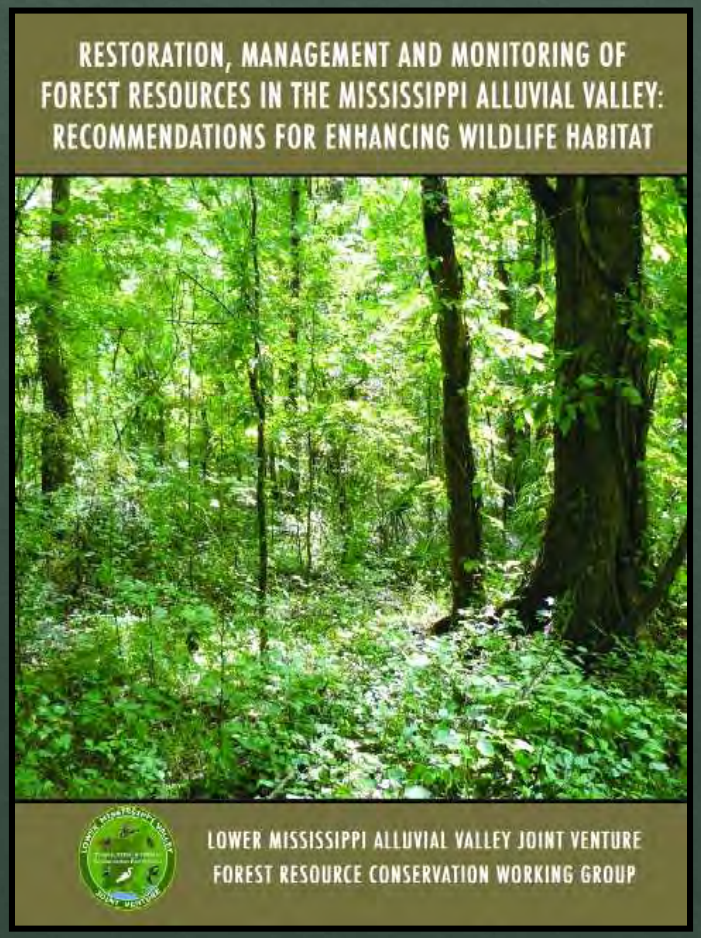
Hurdles:

- Criticism form traditional forest management practitioners
  - Consultants
  - Even-aged forest management
  - Forestry Academia

Solution:

- Original Document was published in 2007
- Revision underway

Lower Mississippi Valley Joint Venture's Forest Resource Conservation Working Group



Context Includes Overviews of:

The Mississippi Alluvial Valley

Priority Wildlife Species and Habitat Objectives

> Game Species

Management of Bottomland Hardwood Forests

> Management of Young Stands

> Economics

Restoration of Bottomland Hardwood Forests

Forest Evaluation and Monitoring

> Tools for Assessment and Treatment of Reforested BH Stands on WREs

Recommendations and Conclusions

Methods Used to Reach DFCWs

- Individual Tree Selection
- Individual and Group Selection
- Group Selection
- Shelterwood
- Clearcut

Individual Tree Selection

Well stocked / Relatively uniform distribution

- Quality good; multiple species; relatively young stand:
  general crown thinning

- Quality poor; species diversity low; older stand:
  thin heavier to establish or advance regeneration

Individual Tree Selection

Individual Tree Selection 2yrs post harvest

Individual Tree and Group Selection

Areas of good quality/stocking ; poor quality/stocking

Thin the good; group release poor, if regeneration is present

Overstory manageable; desirable regeneration fading

Opportunistically release regeneration with groups

Overstory spp. diversity low; regeneration more diverse

Release when appropriate

Individual and Group Selection

Group Selection

Habitat and Stand Conditions generally good

don't want to thin across entire stand

- Provide patches of early successional habitat
- Release patches of desirable advanced regeneration

Group Selection

Shelterwood

Regenerate the stand

- "Classic case": advance regeneration for eventual full release (can be used with artificial regeneration)

- Release regeneration already present/competitive (overwood may be retained indefinitely)

- two layered canopy (structural diversity/emergent trees)
- mark to retain desirable habitat components (snags, cavities, mast producers, species not likely to perpetuate)

Shelterwood

Shelterwood

Clearcut

Regenerate the Stand

(Very low stocking and/or quality)

- To release advanced regeneration under very low quality overstory
- Species conversion (often in conjunction with artificial regeneration)


Questions?