



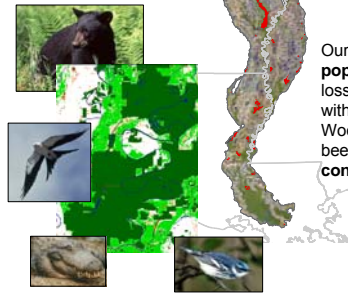
Desired Forest Conditions

within Bottomland Hardwood Forests in the Mississippi Alluvial Valley

Forest Resource Conservation Working Group, Lower Mississippi Valley Joint Venture

Priority Wildlife Species

Our objective is to provide forest habitat capable of supporting sustainable populations of all native species within the Mississippi Alluvial Valley. However, forest loss, fragmentation, and hydrological change has markedly altered habitat conditions within bottomland forests. Of particular concern are species such as Ivory-billed Woodpecker, Louisiana black bear, and several forest interior songbird species that have been negatively impacted by these forest changes. Thus, we advocate forest conditions that are conducive to the viability of a suite of priority wildlife species.



Forest Restoration

Extensive forest restoration (e.g., Wetland Reserve Program) has provided progress toward landscape objectives. However, we recognize the previous restoration methods may not readily provide "Desired Forest Conditions." We recommend planting multiple species combining shade-intolerant, early successional species, shade-tolerant and/or hard-mast producing trees. Plantings, and natural colonization, should result in an average of >250 trees/acre within 3 years – preferably within a matrix of high stem density patches and canopy gaps with sparse stem density.



WILDLIFE FORESTRY

Forest-dependent (silvicolous) wildlife are responsive to Landscape Quality and Site Quality. We define *Desired Forest Conditions* as forests meeting both Desired Landscape and Stand Conditions. Traditional forest management has focused on maximizing timber volume (lumber or pulp) through silvicultural methods that promote optimal growth and vigorous health of desired tree species. Often traditional silviculture is not optimal for silvicolous wildlife. Indeed, quality habitat for priority wildlife likely requires a sacrifice in timber production and retention of less healthy trees. Even so, **commercially viable, wildlife-oriented silviculture using variable retention harvests can be used in conjunction with forest restoration and natural processes to achieve Desired Forest Conditions** within bottomland hardwood forests.

Landscape Condition

To address landscape scale habitat needs of priority wildlife species, we advocate local landscapes (>10,000 acres) should be extensively forested in a matrix of large blocks of contiguous forest and closely associated smaller forest fragments. Where possible forest corridors should link forest landscapes. **Some area should be passively managed** (i.e., set-aside as "unmanaged" controls). However, to ensure development of "Desired Stand Conditions" **most forests should be actively managed using wildlife forestry silviculture methods.** Regeneration harvests of areas >7 acres (i.e., clear-cuts) should be restricted to <10% of the landscape and management should ensure some early successional (i.e., shrub-scrub) habitat is available.

Stand Condition

Size, structure, and composition of forests are important parameters for predicting suitability for silvicolous wildlife. Many **priority wildlife species favor structurally diverse and species rich forests which harbor large trees and frequent gaps in the canopy.** These conditions provide suitable habitat for foraging and cover within all dimensions of the forest and provide a desirable blend of regeneration, maturity, and senescence of forest trees. The distribution and abundance of suitable forest habitat is largely dependent on disturbance. Historically, disturbances resulted from flood, fire, tornadoes, etc. Under current conditions, many of these disturbances are spatially and temporally restricted which, in combination with unsustainable forest management practices, have resulted in homogeneous, closed canopy forests with little structural diversity or understory vegetation. **We advocate the use of wildlife forestry silvicultural practices to introduce disturbance to these forests and thereby stimulate development of "Desired Stand Conditions"**

Desired Landscape Condition

Habitat Type	% of Area	Description
Forest Cover	70 – 100%	Forest (habitat with >25% tree crown coverage) in a matrix of large forest patches and closely associated forest fragments should be the dominant cover type. At any time, 35 - 50% of forest cover should meet "Desired Stand Conditions."
Actively Managed	70 – 95%	Forests that are managed via prescribed silvicultural treatments to meet desired stand conditions.
↳ Regenerating Forest	<10%	A subset of actively managed forests which targets regeneration of shade-intolerant trees on areas >7 acres via removal of >80% of forest canopy (e.g., clear-cuts). Areas are considered regenerating until canopy trees achieve 1/3 of their anticipated site-specific height.
↳ Shrub-Scrub	0 – 5%	Thamnic, semi-permanent or ephemeral woody vegetation – often represented by early seral (successional) forests that result from active forest management.
Passively Managed	5 – 30%	Areas that are representative of different forest types within which little or no anthropogenic silviculture occurs (e.g., wilderness, set-aside, or natural areas).

Desired Stand Condition

Primary Factors ¹	Desired Structure	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 (≥ 25% older age class)	>90ft ² / acre (≥ 60% older age class)
Tree stocking	60 – 70%	<50% or >90%
Secondary Factors ²		
Dominant trees ³	≥0.5/ac	≤0.25/ac
Under-story cover	25 – 40%	<20% or >60%
Regeneration ⁴	30-40% of area	<20% of area
Woody debris (>10 inch diameter)	≥200 ft ³ / acre	<100ft ³ / acre
Small cavities (<10 inch diameter)	>4 visible holes / acre or >4 snags >4 inch dbh	<2 visible holes / acre or <2 snags >4 inch dbh
Large cavities (>10 inch diameter)	≥1 visible hole / 10 acres or ≥2 stems/acre ≥26 inch dbh	<1 visible hole / 10 acres or <1 stem/acre ≥26 inch dbh
Dead, dying, or stressed trees (≥10 inch dbh)	>6 stems / acre	<4 stems / acre

¹ Stand conditions that management actions directly impact. Management should strive for tree species and forest structure diversity. Areas lacking canopy cover (e.g., group selection cuts) should be <20% of stand area.
² Stand conditions usually indirectly impacted by management actions. Proliferation of vines, cane, and Spanish moss should be encouraged where possible.
³ Trees with >25% of crown above general forest canopy (a.k.a. emergent trees) that should receive greater emphasis on more diverse sites (e.g., ridges).
⁴ Advanced regeneration of shade-intolerant tree species in sufficient numbers (ca. 500/acre) to ensure their succession to the forest canopy.