

WEST GULF COASTAL PLAIN/OUACHITAS Open Pine Landbird Plan Summary 2011



Open pine habitat is important for priority bird species and other wildlife, making conservation of this habitat a high priority in the region. Open pine is defined as "forest that is greater than 80% pine, with canopy cover between 25 and 60%." Native open pine stands composed of longleaf pine (*Pinus palustris*) or shortleaf pine (*Pinus echinata*) once predominated in much of the Southeast, but the longleaf pine ecosystem has declined by 97% since European settlement, and shortleaf pine acreage has declined by 50% over the past 50 years. Much of the potential open pine habitat on private lands in Texas and northern Louisiana is dominated by stands (predominately loblolly pine) maintained at high stem densities.

Open pine systems are threatened by conversion to plantations of other pine species, land speculation, development, or conversion to pasture. With fire suppression and habitat conversion, many of the bird species dependent upon open pine have markedly declined.

This plan enumerates priority bird species within open pine, identifies umbrella species representative of the needs of those priority species, describes habitat structure necessary for viable populations, sets population and habitat goals, and describes a decision support tool intended to guide management actions.

Formerly common within the West Gulf Coastal Plain/Ouachitas (WGCP), "open" pine habitat characterized by low canopy cover, low basal area, and an open grassy or herbaceous understory was historically maintained by periodic fires. However, pine plantations are often planted with species other than *Pinus palustris* and *Pinus echinata*, and at high densities. Most landowners have chosen to plant loblolly pine (*Pinus taeda*) within the WGCP when reforesting their property because loblolly is easier to establish on some sites, and due to the perception that their reforestation return on investment can be recouped at an earlier date. With prolonged absence of fire, a dense hardwood midstory develops beneath the pine overstory, limiting sunlight at the forest floor. As canopy closure increases, herbaceous plant species disappear.

Restoration of severely degraded pine habitats involves thinning of pines and/or complete or partial removal of hardwood canopy and shrub midstory to re-establish light penetration to the forest floor, and subsequently reintroducing periodic fire to promote herbaceous understory species and reduce undesired hardwoods.

WGCP open pine habitats include the following types:

- Longleaf pine (highest quality timber of all southern pine species)
- Shortleaf/loblolly pine (regional subtypes below)
 - ▶ Ouachita Mountains – Shortleaf Pine/Bluestem Woodland (abundant herbaceous understory)
 - ▶ Ouachita Mountains – Pine-Oak Forest
 - ▶ West Gulf Coastal Plain – Dry Pine-Hardwood Flatwoods
 - ▶ West Gulf Coastal Plain - Pine-Hardwood Forest
 - ▶ West Gulf Coastal Plain – Sandhill Oak-Shortleaf Pine Forest

Access the full WGCP Open Pine Landbird plan online at
www.lmvjv.org/landbird-plans

Birds of Open Pine in the WGCPO

Eleven bird species designated as warranting conservation concern or given priority status in open pine habitats of the WGCPO.

Priority bird species of open pine habitats in the WGCPO Bird Conservation Region include:

- Northern bobwhite (*Colinus virginianus*)
- Eastern Wild Turkey (*Meleagris gallopavo silvestris*)
- American Kestrel (*Falco sparverius paulus*)
- Red-headed Woodpecker (*Melanerpes erythrocephalus*)
- Red-cockaded Woodpecker (*Picoides borealis*)
- Brown-headed Nuthatch (*Sitta pusilla*)
- Sedge Wren (*Cistothorus platensis*)
- Prairie Warbler (*Setophaga discolor*)
- Bachman's Sparrow (*Peucaea aestivalis*)
- Henslow's Sparrow (*Ammodramus henslowii*)
- Le Conte's Sparrow (*Ammodramus leconteii*)

Four species—Red-cockaded Woodpecker, Bachman's Sparrow, Brown-headed Nuthatch, and Northern Bobwhite—are designated as **umbrella species, which have collective habitat requirements considered sufficient to meet the needs of all priority species in open pine habitat.**

The large home range (585 acres) of Red-cockaded Woodpeckers is generally considered large enough to meet minimum habitat requirements for most species of concern in open pine habitat.

Brown-headed Nuthatches readily colonize open pine habitat as new habitat is created or as a stand matures.

The presence of Northern Bobwhite can be used as an indicator of the quality of the herbaceous component in open pine habitat and provides feedback on prescribed management actions. Within open pine habitats, Northern Bobwhite requires a well developed herbaceous layer for nesting and brood cover.

Bachman's Sparrow is considered the quintessential grassland bird species in open pine habitat. Its presence is indicative of a well developed herbaceous layer. Bachman's Sparrow appears to readily colonize new habitats, although high connectivity among open pine patches likely enhances their dispersal.

Population and Habitat Objectives

Population objectives for Bachman's Sparrow, Brown-headed Nuthatch, and Northern Bobwhite were set based upon three time horizons:

- Short-term Goal: stabilize population trends indicated by BBS data over the most recent 5 years
- Medium-term Goal: return population to level of circa 1980
- Long-term Goal: return population to level of circa 1968

Population and habitat objectives for Red-cockaded Woodpecker are established by the Recovery Plan.

Minimum Regional Habitat Objectives

	Medium-term				Long-term			
	Population		Habitat (ha)		Population		Habitat (ha)	
Umbrella Species	Objective	Deficit	Objective	Deficit	Objective	Deficit	Objective	Deficit
Bachman's Sparrow	37,103	27,190	111,309	81,570	75,622	65,709	226,866	197,127
Brown-headed Nuthatch	157,844	37,465	164,369	39,015	191,010	70,631	198,903	73,549
Northern Bobwhite	199,050	155,050	1,353,540	1,054,340	262,156	218,156	1,782,661	1,483,461
Red-Cockaded Woodpecker	NA	NA	NA	NA	3,766*	2,639*	370,764	190,412

* Woodpecker population counted as potential breeding groups.

Habitat Management

Well managed open pine forests where prescribed fire is frequently implemented (2-5 yr intervals) have the potential to sustain habitat that supports priority bird species. **Open pine composed of older trees maintained at relatively low canopy cover and basal area with sparse shrubby and abundant grassy understory provides the greatest benefit to priority bird species.** These species are less likely to breed in areas with shrub and hardwood encroachment.



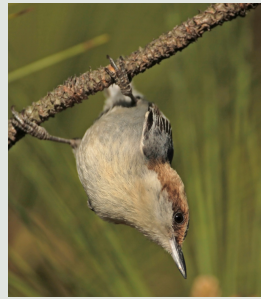
Habitat management for Red-cockaded Woodpeckers merges with ecosystem management because: (1) the Red-cockaded Woodpecker is an indicator species whose populations track the health of southern pine ecosystems; (2) their protection provides simultaneous protection

for many associated species, and (3) the Red-cockaded Woodpecker is a keystone species whose presence influences the presence and/or abundance of other species (secondary cavity users) in the community. Even so, management of upland pine communities may not be consistent with an ecosystem approach when prescribed fire and retention of older trees is focused on Red-cockaded Woodpecker clusters and not on the landscape.

Red-cockaded Woodpeckers require:

- Mature (>80 years) live pines for nesting cavities
- Large, old trees (at least 60 years and 14 in diameter)
- Low densities of small/medium pines
- Sparse or no hardwood midstory and understory canopy
- Well developed herbaceous understory (40% or > of native, fire-tolerant herbs able to carry fire every 2-5 years)

Connectivity among populations is essential for the long-term survival of the species. As Red-cockaded Woodpecker is a federally and state endangered species, programs are available to promote management of this species on private lands, including Memoranda of Agreement, Safe Harbor Programs, and Habitat Conservation Plans for Private Lands.



Brown-headed Nuthatches are endemic year-round residents of mature, open pine habitats from east Texas to southeast Virginia. Greatest abundance occurs in stands with large snags, an open midstory, open canopy, and sparse understory maintained by fire or silvicultural thinning. Midstory that exceeds 6 m (20 ft) in height tends to obscure cavities and inhibits movement between higher foraging sites and lower nesting cavities. Increased abundance of large snags likely improves reproduction.



The Northern Bobwhite has experienced marked range-wide population declines since 1966, with declines of -4.4%/year in the WGCPO during that same period. Unlike the other three umbrella species that typify open pine habitats, quality habitat for Northern Bobwhite may include a mosaic of forest and open land. Open pine management should: (1) keep sunlight on the forest floor, and (2) provide ground vegetation structure that affords mobility, nesting cover, and foraging opportunities (e.g., insects, legumes, and soft mast). Frequent disturbance and a canopy cover of 40-60% and basal area of 5-16 m²/ha is considered ideal.



In the Southeast, its stronghold, Bachman's Sparrow is in need of immediate management due to long-term declines over 40 years, with the rate of decline more than doubling since 1980 to 20.8% per year. Bachman's Sparrow responds best to a frequent fire interval of about 3 years. Timber harvests that result in reduced basal area (<20 m²/ha) and canopy cover are beneficial. Revegetation methods that do not destroy ground cover (e.g. prescribed fire) are preferred. Due to its limited dispersal ability, this species requires consideration of how timber harvest strategies may affect dispersal among suitable habitat patches.

Decision Support Tool

Knowing the amount of suitable habitat needed to support a viable population is only part of the information required for effective conservation. Specific site-scale conditions (understory structure, stand age, etc.) and landscape context (patch size, nature of surrounding landscape) are critical components of carrying capacity.

The decision support tool (DST) described here addresses important landscape factors with the goal of guiding open pine management (enhancement, prescribed fire, etc.) and protection activities to locations where they have the greatest chance of supporting viable populations of priority bird species. The DST was created using information from three umbrella species: Red-cockaded Woodpecker, Bachman's Sparrow, and Brown-headed Nuthatch (due to unresolved issues regarding the parameters for Northern Bobwhite).

The model assumes evergreen forest and mixed (evergreen and deciduous) forest, upon application of an appropriate management regime (e.g., prescribed fire and thinning), represent suitable habitat for priority open pine bird species.

Clusters of interconnected patches that contained sufficient potential habitat to support a minimum viable population (MVP) were designated as such, and all the patches in the cluster were identified as potential targets for open pine management. All patches large enough to support at least one MVP are given the same priority in the model.

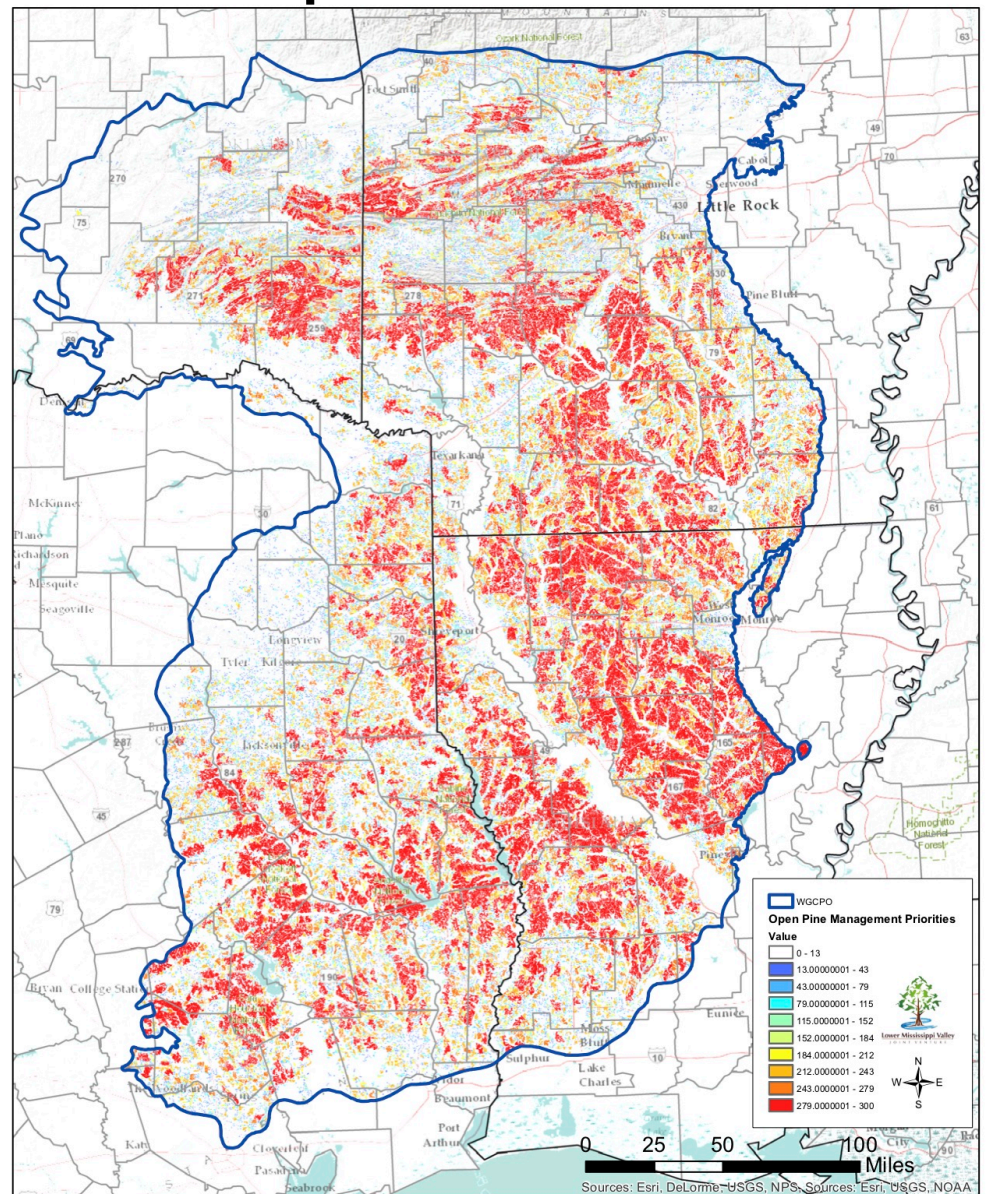
Monitoring

Continued monitoring via Breeding Bird Survey (BBS) routes is recommended, specifically with a request to all BBS volunteers to record time (within 1 minute intervals) and distance (within 2 categories [$<50m$ and ≥ 50]) of first detection for each bird detected.

Also the demographic monitoring of Red-cockaded Woodpeckers should follow the protocols outlined in Appendix 2 of the Red-cockaded Woodpecker Recovery Plan 2nd Revision (nestling banding, group checks) for all groups on federal and state lands. Private landowners should also be encouraged to follow the same protocols where time and funds allow.



LMVJV Open Pine Bird Priorities



The WGCPD Open Pine Decision Support Model

Banner photo: Post-winter burn response in a longleaf pine stand by Pulaski; Eastern Wild Turkey nest—turkeys generally nest in dense herbaceous ground cover—by USDA/NRCS.