



America's Longleaf Restoration Initiative Longleaf Partnership Council



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Longleaf Pine Maintenance Condition Class Definitions

*A Guide to Assess Optimal Forest
Habitat Conditions for Associated
Plant and Wildlife Species*

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The Range-wide Conservation Plan for Longleaf Pine calls for doubling the acreage of longleaf pine in the maintenance condition class. This guide provides definitions to assist land managers and practitioners in assessing longleaf pine forests to determine whether their forest is in this condition. The maintenance condition class has the potential to provide optimal habitat for plant and wildlife species associated with longleaf pine ecosystems. The guide is not intended to establish desired conditions for all longleaf pine tracts. The desired conditions for individual longleaf pine tracts are determined by their land managers or landowners based upon their individual management objectives.



USFWS/Randy Browning

Introduction

In 2009, the America's Longleaf Restoration Initiative released the Range-Wide Conservation Plan for Longleaf Pine to provide a 15-year road map for restoring, enhancing, and maintaining a goal of eight million acres of longleaf pine forests across its range, which was more than double the existing acreage at that time. Thanks to the efforts of numerous private and public landowners, representing the interests of the forest products industry, research institutions, non-governmental conservation organizations, environmental groups, local/regional economies, and numerous others, the decades-long trend of decline in longleaf pine has been reversed and, as of this writing, longleaf pine acreage has actually grown to an estimated 4.4 million acres. The numerous interests responsible for leading this effort are all represented on the Longleaf Partnership Council, a diverse 33-member organization whose purpose is to coordinate and unite range-wide longleaf pine restoration efforts called for in the comprehensive Conservation Plan.

One of the Conservation Plan's goals is to define a maintenance condition class and identify longleaf pine forest acreage in this class: "The goal of America's Longleaf is to have, within 15 years, about three million of the eight million acre total in or moving toward this condition." Forests in the maintenance condition class have the potential to provide optimal ecological benefits for a wide range of plant and animal assemblages that are dependent on longleaf pine ecosystems. It is not suggested or implied that all land managers should strive to meet this condition. The intent of this document is to define the conditions that landowners with a primary goal of ecological conservation can utilize to assist them in accomplishing their objectives. The Longleaf Partnership Council recognizes the important contributions that industrial forests and economically-driven non-industrial private landowners provide toward meeting our eight million acre target, as well as providing beneficial habitat for many wildlife species, soil and water quality benefits, and significant positive economic impacts. It is not suggested or implied that the maintenance condition class is applicable, or even attainable, by landowners whose interests are not primarily driven by ecological conservation, which is why the Plan only calls for roughly one-third of the eight million acre goal in this condition.

The following table provides general definitions to assist land managers interested in meeting maintenance condition class criteria in assessing stand conditions. An important consideration is how to determine whether a stand is "moving toward this condition" as stated in the Plan. In many cases, land managers must make assumptions to reach this determination. For example, in younger stands, there will obviously be an absence of mature longleaf pines. In this case, the land manager should consider the stand objectives, and if these include long-term retention of longleaf pine, it should be assumed that the stand is moving toward the maintenance class. Similarly, if there is an active prescribed fire regime being applied and it is anticipated that it will be continued into the future, one can reasonably expect some degree of mid-story/shrub control and understory improvements.

There are various products available that provide much greater detail describing ecological conditions of longleaf pine forests, and even more efforts are underway to enhance and expand these existing products. For America's Longleaf Restoration Initiative's assessment purposes, we examined data from various sources, including NatureServe, US Forest Service, USFWS-East Gulf Coastal Plain Joint Venture, the Jones Ecological Research Center, and the National Fish and Wildlife Foundation. We then chose to merge the metrics from ten identified longleaf pine community types into the single, all-inclusive table that follows.

General Longleaf Pine Maintenance Condition Class Metrics

*A longleaf stand or area is considered to be in the “maintenance” condition class if all identified metrics are checked; otherwise the stand is in an “improve” condition class. *****

Metric	Maintenance Condition Class Minimum Standards	Field Observation Checklist
Overstory Canopy		
Longleaf Pine Canopy	Longleaf stand with two-tiered or uneven-aged structure; longleaf pine basal area 40-70 ft ² /acre.*	
Canopy Hardwood or Off-Site Pine	Basal area ≤ 10 ft ² /acre of canopy hardwoods or off-site pines ≥ 5” dbh.	
Evidence of mature characteristics in stand	Large longleaf present (BA at least 20 ft ² /acre of trees ≥ 14” dbh class) or flat-top longleaf present in canopy.**	
Mid-story Canopy		
Shrub Cover	Shrubs average ≤ 30% cover and average ≤ 3 feet tall.	
Canopy Fire-intolerant Hardwood or Off-Site Pine	20% or less mid-story cover, with < 5% cover of fire-intolerant hardwood or off-site pine trees over 16 feet tall.	
Ground Layer		
Herbaceous Indicators	Herbaceous cover > 35%, with native pyrogenic species present in stand. ***	
Longleaf Pine Regeneration	Advance longleaf regeneration cover is 5-15% of stand. Includes grass stage or regeneration < 2” dbh.	
Non-native Invasive Species	Cover of invasive exotic plant species ≤ 1%.	

- * Basal areas could be much lower in wet, savanna longleaf types and could also range slightly higher in actively managed forests.
- ** Represents presence of mature forest wildlife habitat associations – tree size may be smaller and, therefore, basal area slightly lower in some community types.
- *** Wiregrass, Sandhill Dropseed, Little Bluestem, Slender Bluestem, Silver Bluestem, etc.
- **** If progress is being made toward satisfying any of the metrics and it can be reasonably assumed that progress will continue, the metric(s) may be checked as being met.

Overstory Canopy

Longleaf Pine Canopy

Longleaf stand with two-tiered or uneven-aged structure; longleaf pine basal area 40-70 ft²/acre.

Note: Basal areas could be much lower in wet, savanna longleaf types and could also range slightly higher in actively managed forests.

Longleaf pine stand, one-tiered even-aged structure, with open conditions that allow for regeneration. Basal area ~40 ft²/ac., Apalachicola National Forest, photo: James M. Guldin



Longleaf pine stand, two-tiered, even-aged stand with well-developed second age cohort, Catahoula Road, Kisatchie National Forest, photo: James M. Guldin



Longleaf pine stand, multi-tiered, uneven-aged stand structure, Basal area ~60 ft²/ac, Escambia Experimental Forest, photo: James M. Guldin



Mixed longleaf-shortleaf pine stand, multi-tiered, uneven-aged structure, Basal area ~ 30 ft²/ac, Tall Timbers Research Station, photo: James M. Guldin



Overstory Canopy

Canopy Hardwood or Off-site Pine

Basal area ≤ 10 ft²/acre of canopy hardwoods or off-site pines ≥ 5 " dbh.

Longleaf pine stand with minor component of hardwood, Catahoula Road, Kisatchie National Forest, photo: James M. Guldin



Longleaf pine stand with minor component of shortleaf pine, Catahoula Road, Kisatchie National Forest, photo: James M. Guldin



Overstory Canopy

Evidence of mature characteristics in stand.

Large longleaf present (Basal area at least 20 ft²/acre of trees \geq 14" dbh class) or flat-top longleaf present in canopy.

Note: Represents presence of mature forest wildlife habitat associations – tree size may be smaller and, therefore, basal area slightly lower in some community types.

*Longleaf pine stand
One- to two-tiered stand
managed as an uneven-aged
stand, Basal area of large
trees > 20 ft²/ac, Tall Timbers
Research Station, Wade Tract,
photo: James M. Guldin*



*Longleaf pine stand
Two-tiered stand managed as an
uneven-aged stand, Basal area
of large trees > 20 ft²/ac, Tall
Timbers Research Station,
photo: James M. Guldin*



Mid-story Canopy *Shrub cover*

Large longleaf present (Basal Area at least 20 ft²/acre of trees \geq 14" dbh class) or flat-top longleaf present in canopy.

Note: Represents presence of mature forest wildlife habitat associations – tree size may be smaller and, therefore, basal area slightly lower in some community types.

*Longleaf pine stand
Two-tiered using group openings, Shrubs < 30% cover and < 3 ft tall, Apalachicola National Forest, photo: James M. Guldin*



*Longleaf pine stand
One-tiered late-rotation even-aged stand, recent midstory treatment reduced encroaching shrubs and hardwoods; shrubs < 30% cover and < 3 ft tall Sam Houston National Forest, photo: James M. Guldin*



Mid-story Canopy *Canopy Fire-intolerant Hardwood or Off-site Pine*

20% or less mid-story cover, with < 5% cover of fire-intolerant hardwood or off-site pine trees over 16 feet tall.

*Longleaf pine stand
Recent Rx fire reduced mid-story encroachment to < 20 percent, < 5% cover in hardwoods > 16' tall, Sam Houston National Forest, photo: James M. Guldin*



Ground Layer

Herbaceous indicators

Herbaceous cover > 35%, with native pyrogenic species present in stand.

Note: Wiregrass, Sandhill Dropseed, Little Bluestem, Slender Bluestem, Silver Bluestem, etc.

Pitcher plants and native pyrogenic species, Apalachicola National Forest



Ground Layer

Longleaf pine regeneration

Advance longleaf regeneration cover is 5-15% of stand. Includes grass stage or regeneration < 2" dbh.

Sapling longleaf pine in group opening in an uneven-aged longleaf pine stand; group openings ~10% of stand. Winn Road, Kisatchie National Forest, photo: James M. Guldin



Ground Layer

Non-native invasive species

Cover of invasive exotic plant species \leq 1%.

Longleaf pine saplings in group opening in a longleaf pine stand managed using uneven-aged methods, Tall Timbers Research Station, Wade Tract, photo: James M. Guldin

