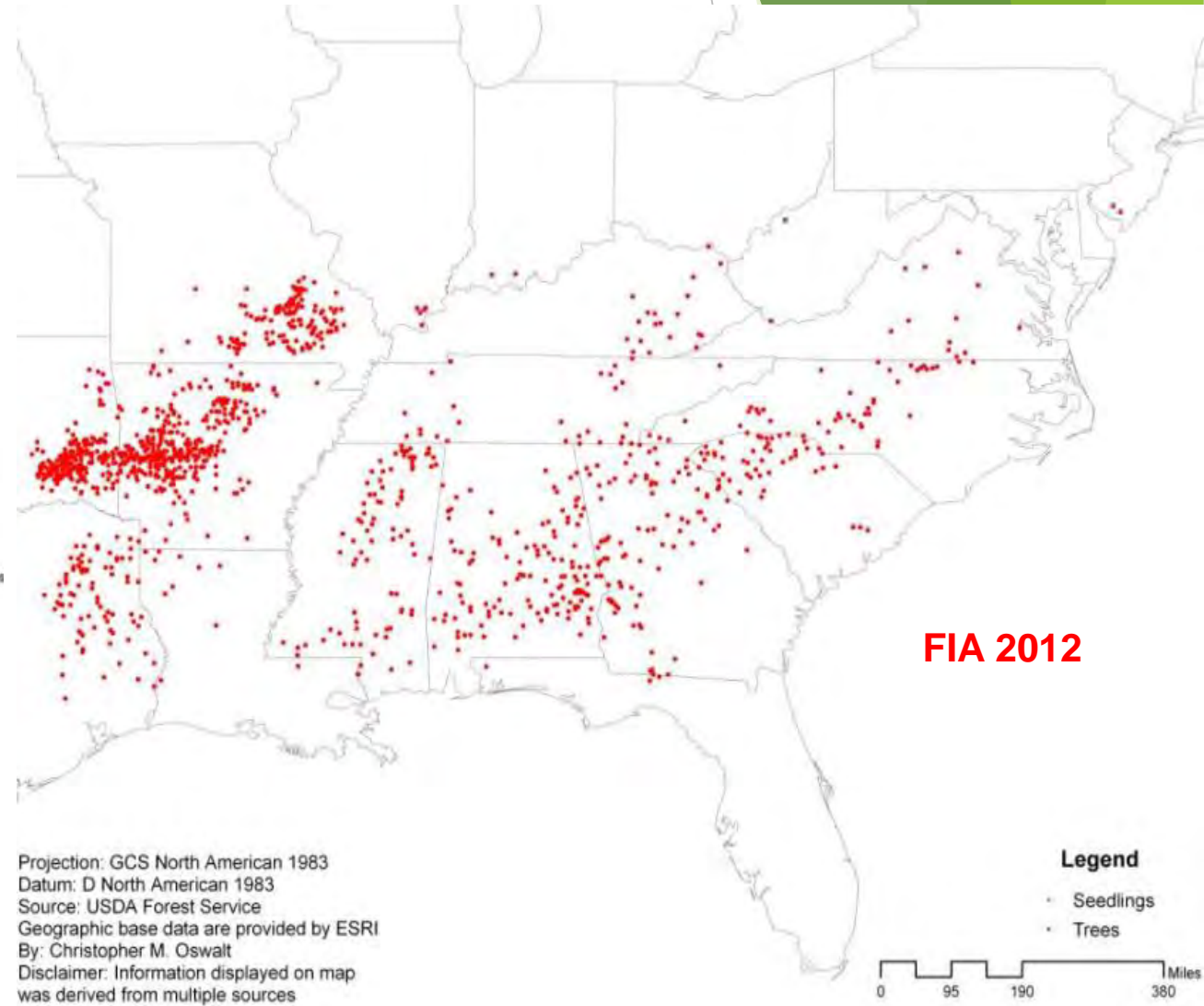
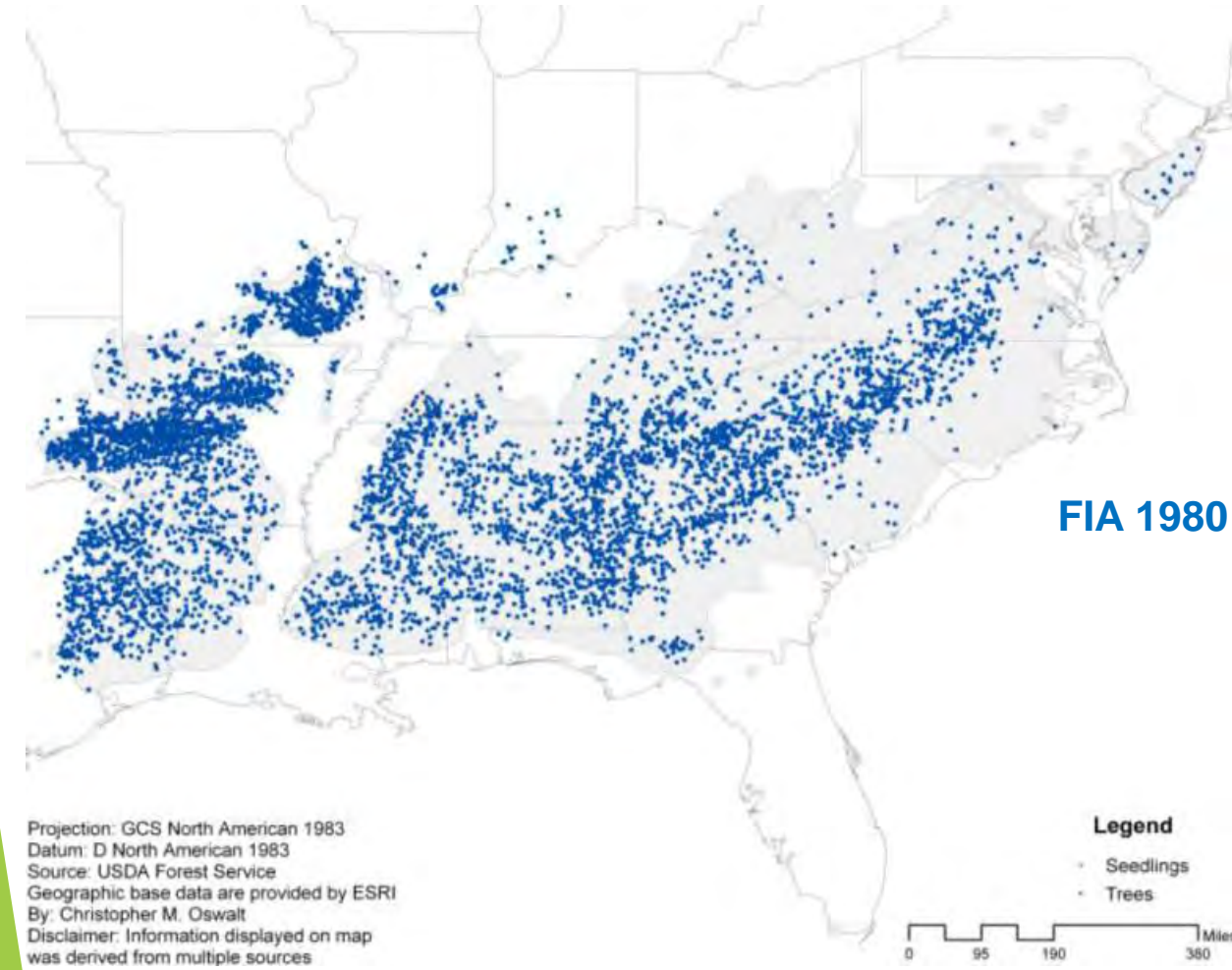




Shortleaf Pine Restoration
and Management in Southern
Region National Forests



USFS FIA data show rapid decline of shortleaf pine

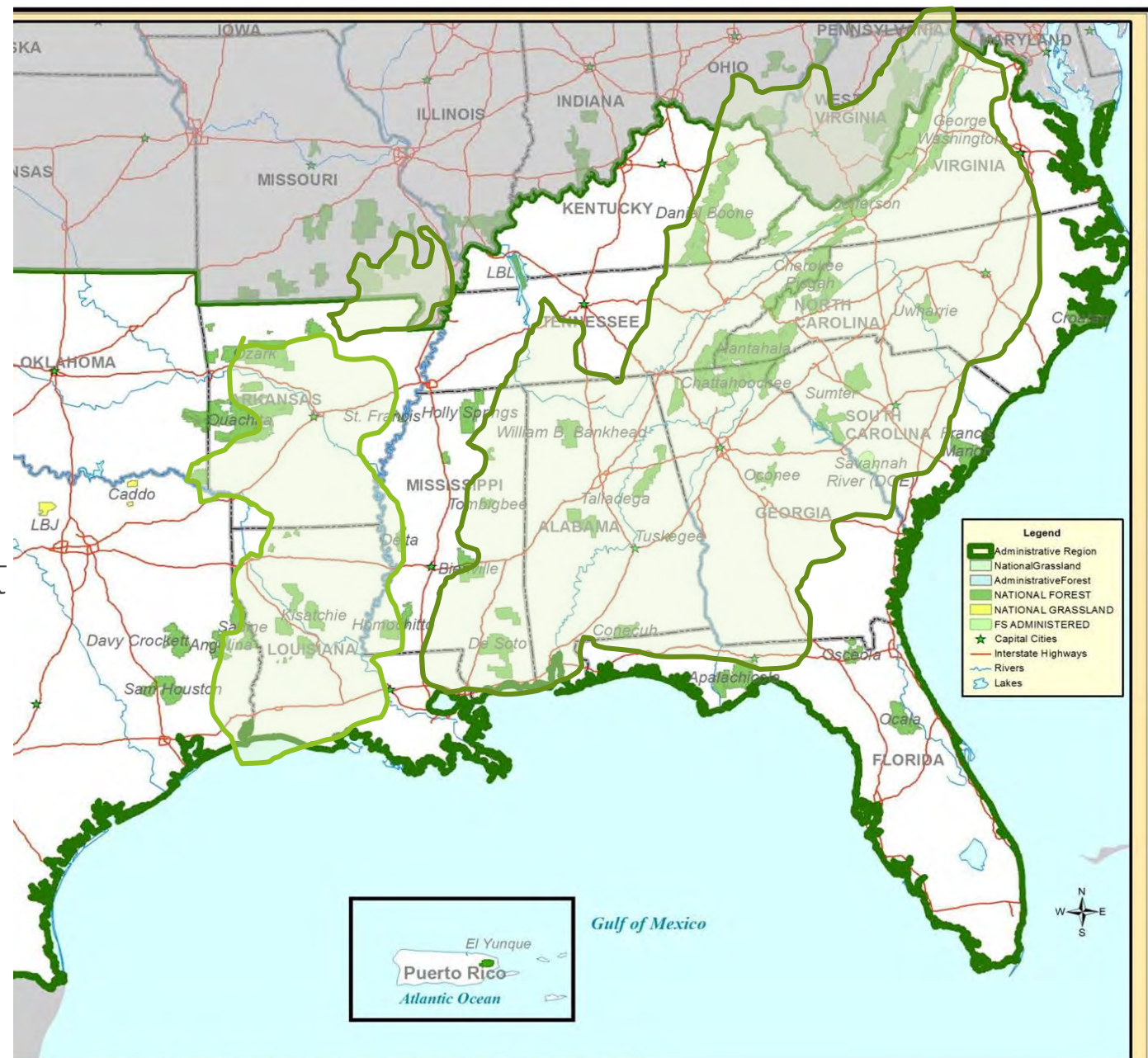


From presentation by Chris Oswalt (2012)

Shortleaf Pine Range and Location of R8 (Southern Region) National Forests

All R8 National Forests, except El Yunque and Florida, have significant potential to manage and restore shortleaf pine.

Forested stands of shortleaf pine or shortleaf pine-oak occur on about 1.8 million acres in R8.

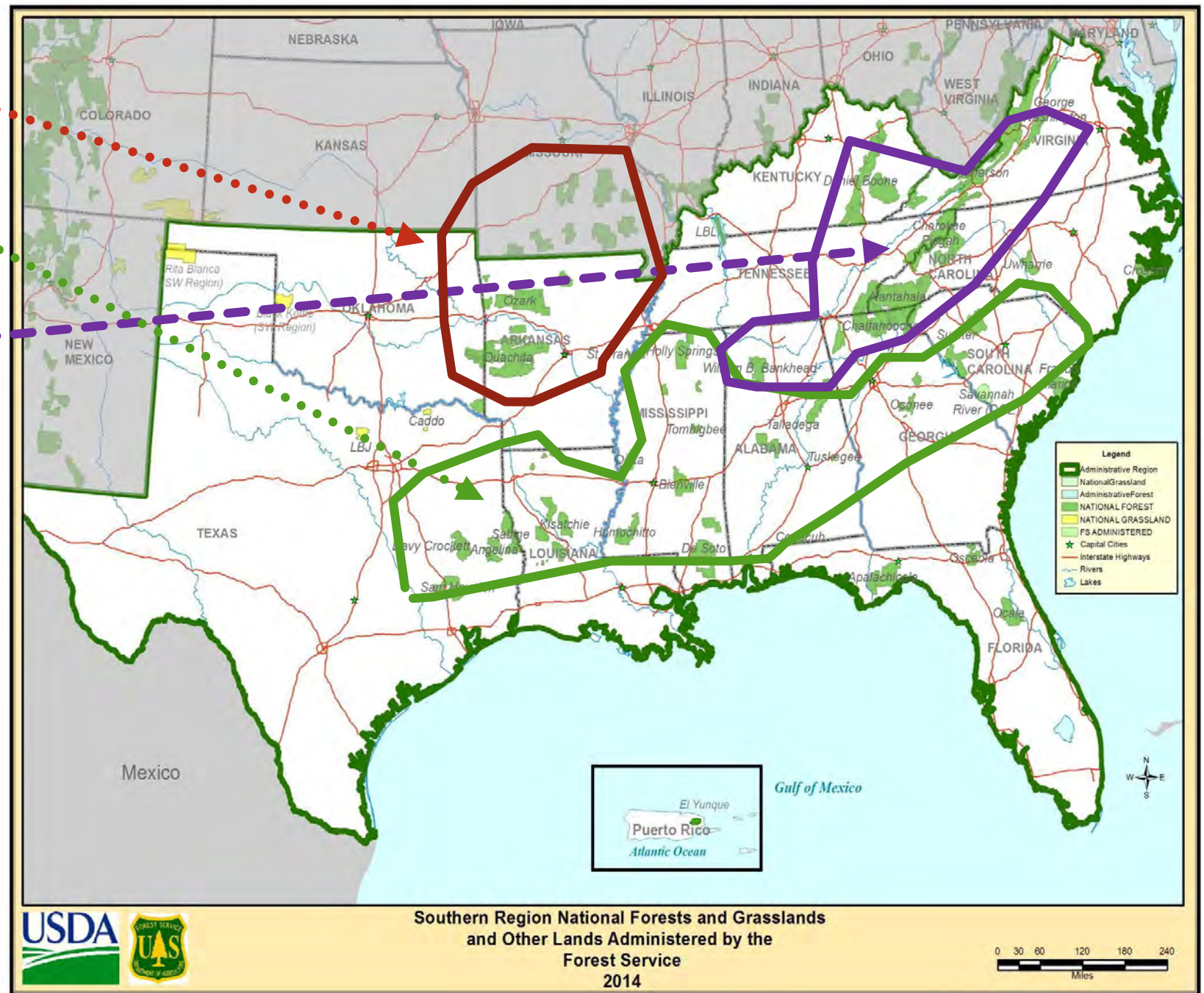


Interior Highlands

Coastal Plains/Piedmont

Southern Appalachians & Cumberland Plateau

- There are three distinct geographical groups of shortleaf pine within R8.
- Within these groups, the total amount of shortleaf pine acres and density of shortleaf pine within forest stands varies considerably.
- Past management and current restoration efforts have also varied greatly within these three geographic groups.



George Washington-Jefferson, Cherokee, Nantahala, Pisgah, Chattahoochee, and Andrew Pickens NFs are in the Southern Appalachians and the Daniel Boone and Bankhead NFs are in the Cumberland Plateau.

This group has the smallest amount of existing shortleaf pine on R8 NFs - about 180,000 acres.

Shortleaf pine in the Southern Appalachians & Cumberland Plateau





This group has probably had the most reduced occurrence especially from the southern pine beetle outbreaks of the past 20 years. During 1999-2003, this destructive insect killed more than a million acres of pine and caused \$1.5 billion in economic losses on state, federal, and private lands in five southern Appalachian states.



Shortleaf pine in the Southern Appalachians & Cumberland Plateau

In this group, shortleaf pine frequently occurs in oak-pine stands and as a minor component in hardwood stands. Open woodlands with herbaceous understory are an infrequent occurrence.



There is a larger variety of pine species in the Southern Appalachians. Need to determine site relationships among shortleaf pine, table mountain pine, pitch pine and Virginia pine.



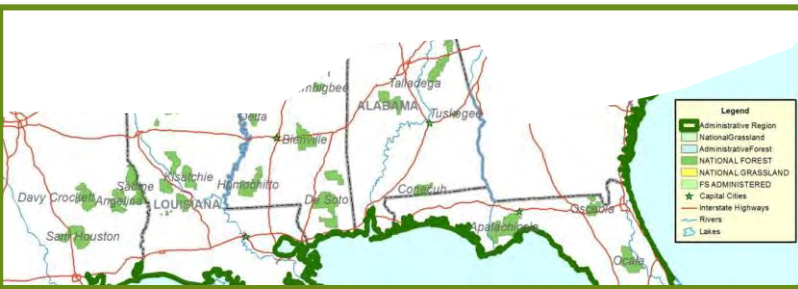


Shortleaf pine
restoration --
Challenges in the
Southern Appalachians

- ▶ Capacity to prescribe burn potential shortleaf pine management and restoration areas
- ▶ Lack of operability in stands needing harvest treatments to initiate restoration
- ▶ Lack of adequate seed source for natural regeneration because of past southern pine beetle outbreaks
- ▶ Need to establish site relationships between shortleaf pine, pitch pine and table mountain pine, which are all restoration species of concern in the Southern Appalachian forest
- ▶ Understanding the site characteristics to determine when to manage for shortleaf, shortleaf-oak, oak-shortleaf or oak with a minor component of shortleaf

Southern Appalachian & Cumberland Plateau- Accomplishments

- ▶ Completed an assessment of shortleaf pine and shortleaf pine-oak acres, both existing and potential
- ▶ Regional Shortleaf pine team visited Forests to validate the assessments and initiate discussion about shortleaf pine restoration
- ▶ As a result of validation process, the assessment for Daniel Boone NF is being adjusted
- ▶ As a result of Forest visits, a technical workshop is being planned in cooperation with the Southern Research Station and the Shortleaf Pine Initiative, to specifically address shortleaf pine restoration and management in the Southern Appalachians.



About 240,000 acres of shortleaf pine and shortleaf pine-oak occur on six National Forests in this group.

Most of existing shortleaf pine is on National Forests in Texas and Mississippi with significant potential on National Forests in Louisiana, Alabama, and South Carolina.



Shortleaf pine in the Coastal Plains/Piedmont



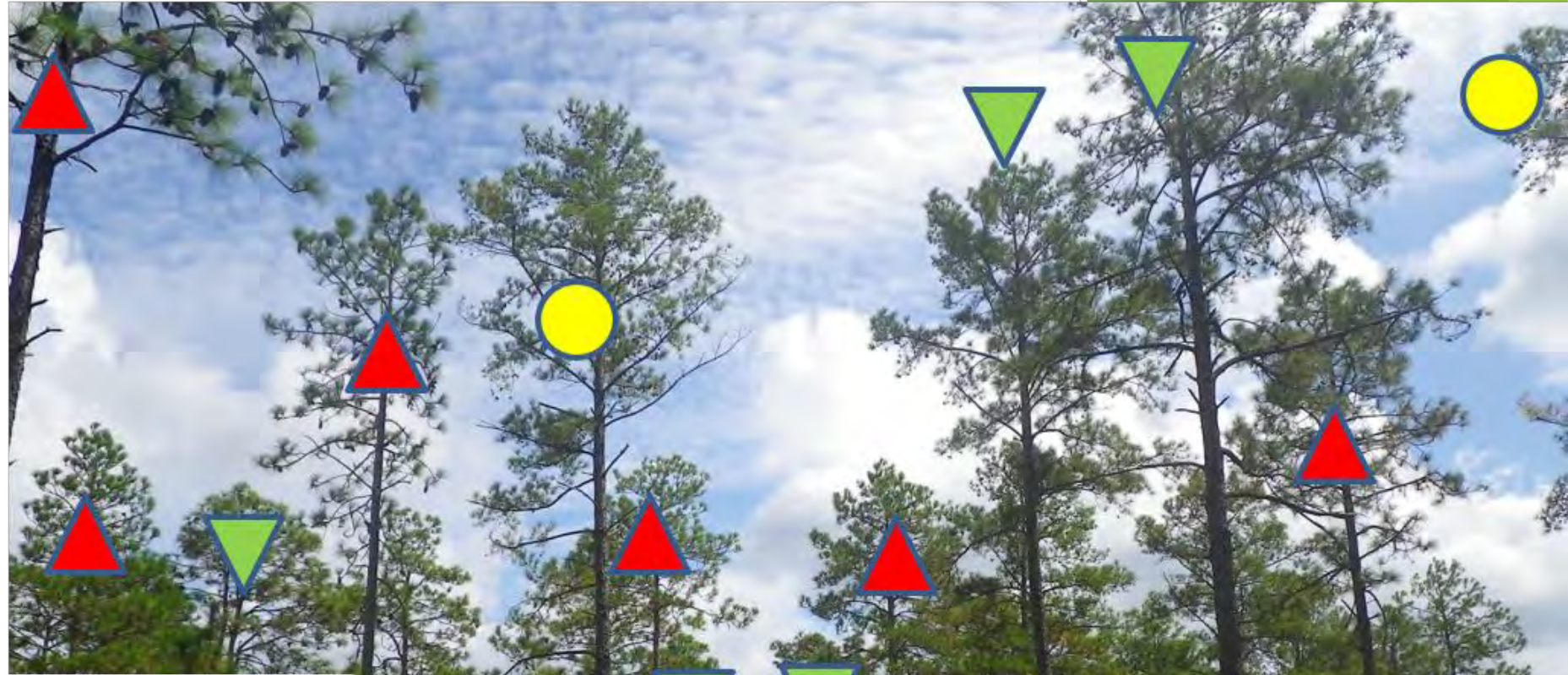
Longleaf



Shortleaf

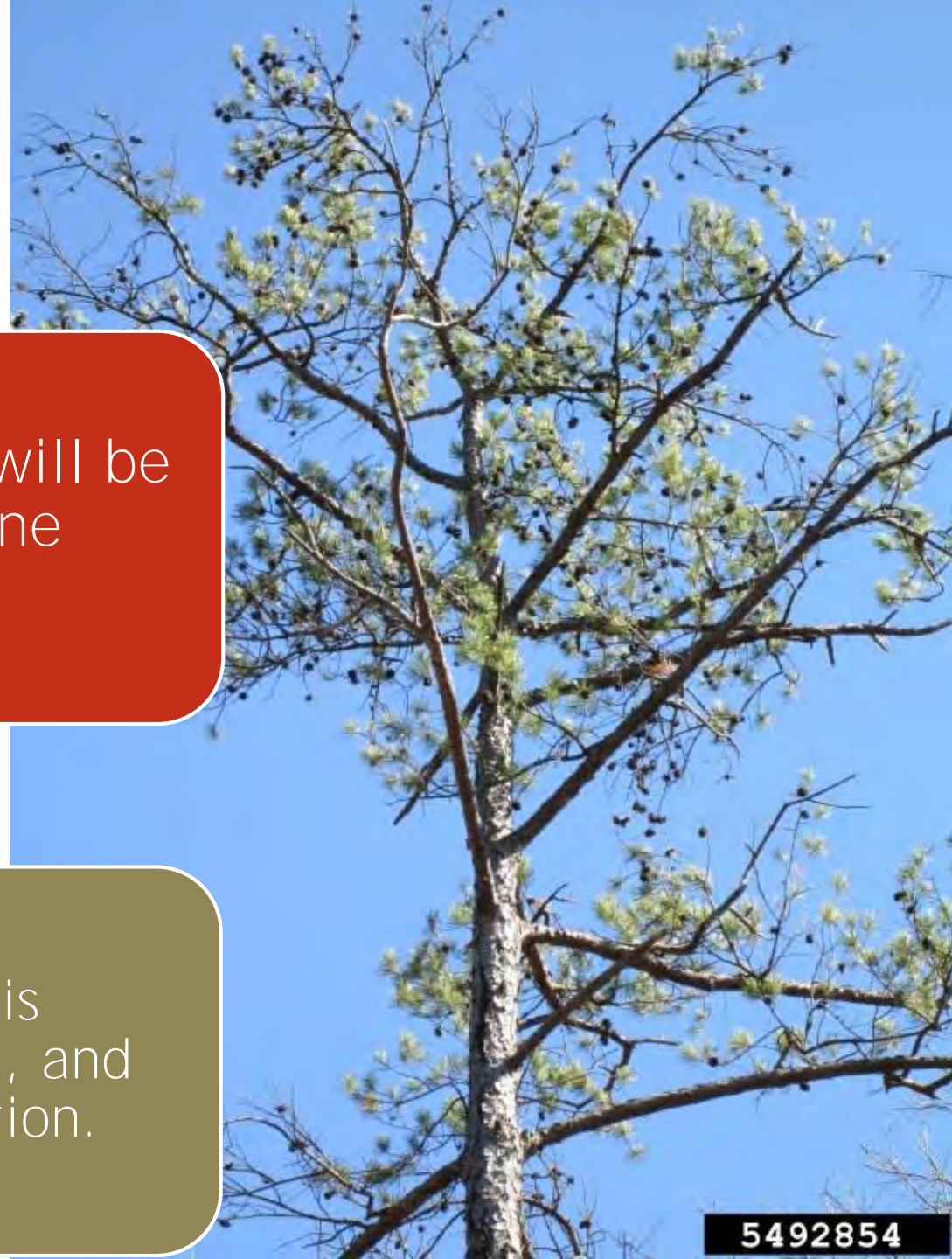
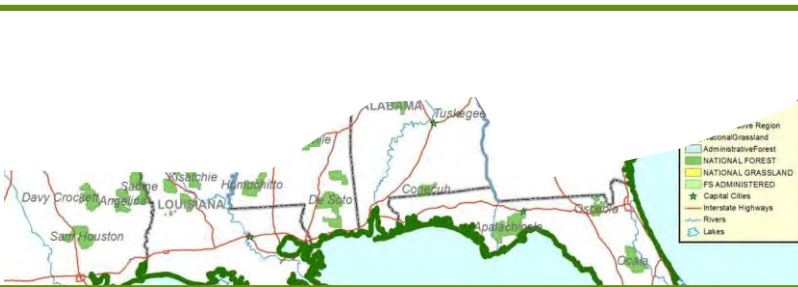


Loblolly



Many of the Forests in this group have longleaf and shortleaf pine occurring on the same sites. It will be important to better understand this relationship and develop appropriate management for both species..

Shortleaf pine in the Coastal Plains/Piedmont



Historical occurrence of Littleleaf disease will be an important consideration for shortleaf pine restoration in the Piedmont.

On high risk sites, mostly in the east part of this group (North Carolina, South Carolina, Georgia, and Alabama) may preclude shortleaf pine restoration.

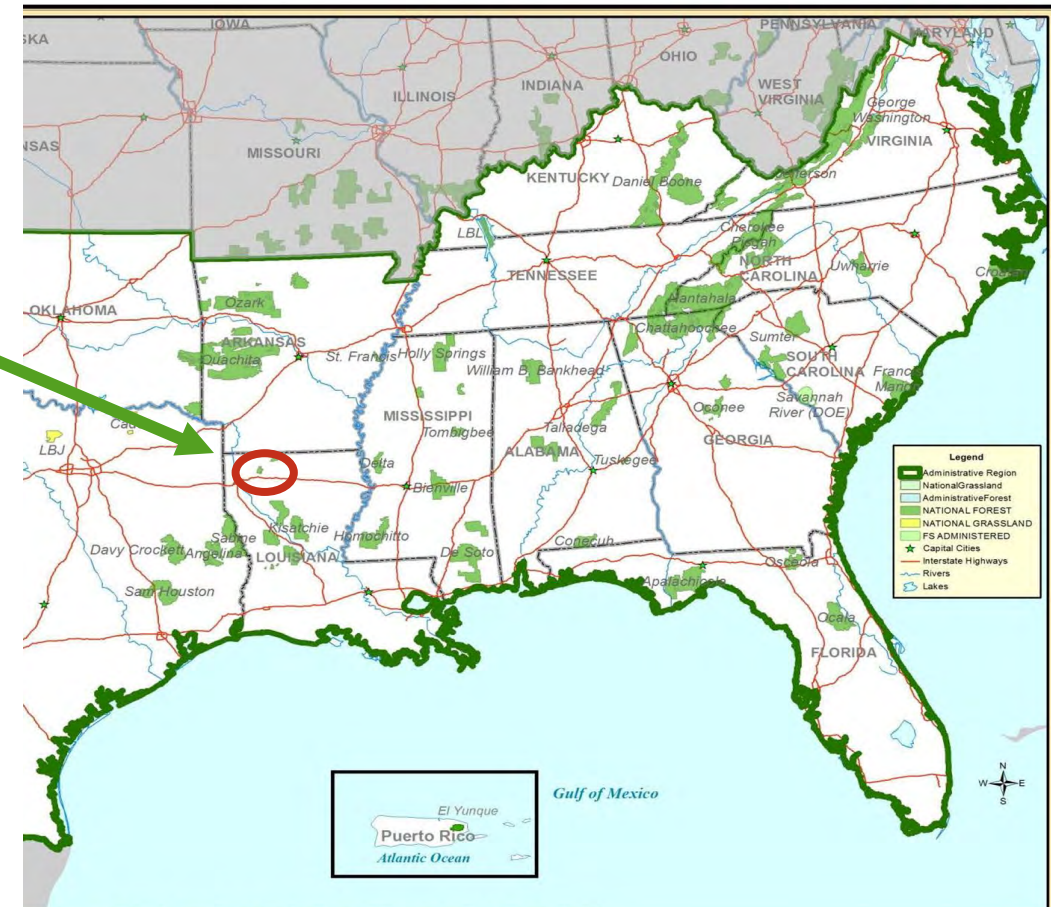
Coastal Plains/Piedmont - Accomplishments

Though most National Forests in this geographic area have been focusing on longleaf restoration in recent years through the American Longleaf Restoration Initiative (ALRI), there are two Ranger Districts that have focused on shortleaf pine restoration.

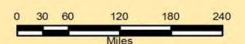
Caney RD, Kisatchie NF

District Size - 35,000 acres

- ▶ Planted 713 acres during 2015-2019
- ▶ Restoring shortleaf by harvesting off-site loblolly pine
- ▶ Prescribe burning to support shortleaf pine restoration



Southern Region National Forests and Grasslands and Other Lands Administered by the Forest Service 2014

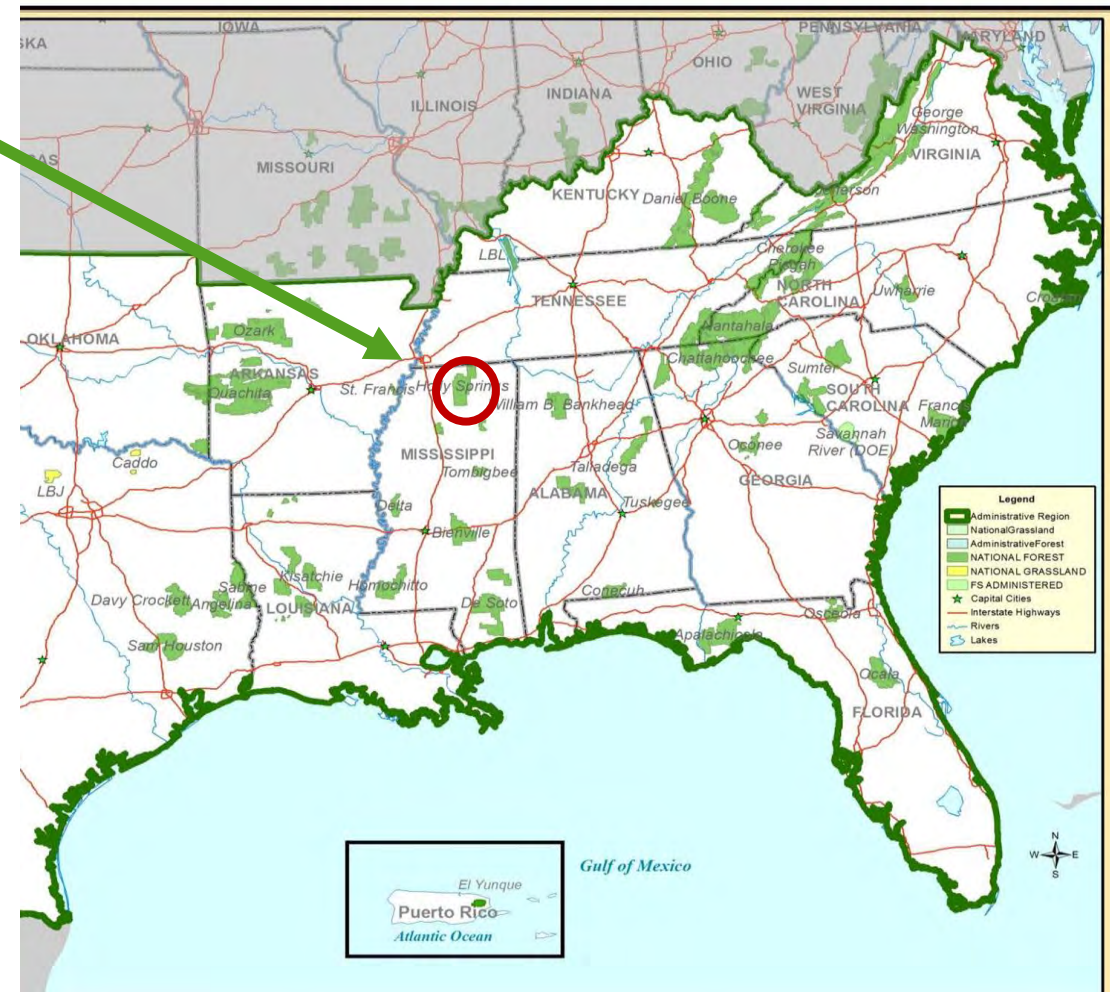


Coastal Plains/Piedmont - Accomplishments

Holly Springs RD, National Forests in Mississippi

District Size - 155,000 acres

- ▶ Planted 627 acres during 2015-2019
- ▶ Restoring shortleaf by harvesting off-site loblolly pine
- ▶ Prescribe burning 18,000 acres to support shortleaf pine restoration





This group has by far the largest amount of existing shortleaf pine on R8 NFs - about 1.4 million acres

Shortleaf pine in the Interior Highlands

In R8, Ouachita NF and Ozark NF.

In R9, Mark Twain NF

Typical restoration prescription is:

- Extended rotation for shortleaf pine from 80 to 120 years
- Thin to residual basal area of about 60 ft²/ac



Typical restoration prescription is:

- Reduce woody midstory (including redcedar)
- Apply prescribed burning on a 3-year cycle



In the past five years, the Ouachita NF and the Ozark NF average planting about 1600 acres of shortleaf pine per year



Interior Highlands - Accomplishments

▶ CFLR - 2012 to 2021

- ▶ Ozark NF - 95,000 ac shortleaf to pine/oak mix
- ▶ Ouachita NF - 372,000 ac shortleaf/bluestem

▶ Joint Chiefs

- ▶ 2014 Western AR Woodland Restoration Project
38,000 ac Private Lands
- ▶ 2016 Oklahoma/Arkansas Woodland Restoration
45,000 ac Private Lands
- ▶ 2019 Western AR/SE OK Woodland Restoration - Bobwhite Quail Focus
Est 31,000 ac Private lands
- ▶ Funds distributed through NRCS to improve private lands within 10 mi of NF lands

▶ T & E Recovery

- ▶ RCW 1990 - 13 Territories/32 Adult birds Present - 75+ Territories/160+ Adult birds
- ▶ American Burying Beetle - future down listing from Endangered status to Threatened
- ▶ Indiana Bat - capturing bats where management activities have occurred

Strategy

- ▶ Involve Research to help answer questions
- ▶ Continue to refine extent of restoration habitat
- ▶ Initiate and expand collaboration partnerships
- ▶ Make use of large scale restoration initiatives
- ▶ Maintain and expand on existing restoration efforts