Shortleaf Pine Demonstration Areas Assist In Promoting Restoration

George Hernández

Shortleaf Pine INITIATIVE

3rd Biennial Conference
Knoxville, TN

Objectives & Key Actions Developed During Regional Stakeholder Workshops

During four regional workshops attended by a wide range of natural resources management professionals and other interested partners, issues, opportunities, and challenges for conserving and restoring shortleaf pine ecosystems were identified.

The workshop participants then proposed objectives and key actions to address the issues, opportunities, and challenges they had identified.

Objective: **Maintain the range-wide partnership that will facilitate the implementation of the plan going forward.**

Key action: Maintain the biennial shortleaf pine conference and workshop.

Objective: **Support the creation and development of ecoregional or state-wide shortleaf pine restoration teams.**

Key Action: Develop regional shortleaf pine networks that share best practices, challenges, and provide a forum for training workshops.

Key Action: Promote the development of accessible shortleaf pine demonstration sites on public and private lands that serve as locations for public outreach, training, and demonstrating best practices.

Objective: **Demonstrate the restoration of diverse herbaceous understory vegetation, regeneration of overstory species, and sustainability of desired ecological conditions.**

Key Action: Identify restoration/demonstration areas with the most "intact" herbaceous layer.

Key Action: Demonstrate restoration that includes the variation of shortleaf pine communities, seral stages, and overstory density and composition.

Objective: Establish Shortleaf Pine Ecosystem Restoration Areas.

Key Action: Develop protocols for forests ecosystems where shortleaf pine is a component.

Key Action: Complete and implement restoration plans for areas identified for restoration.

Key Action: Designate accessible demonstration areas for use in outreach.

Designate accessible demonstration areas for use in outreach.

Promote the development of accessible shortleaf pine demonstration sites on public and private lands that serve as locations for public outreach, training, and demonstrating best practices.

Identify restoration/demonstration areas with the most "intact"
herbaceous layer.

Demonstrate restoration that includes the variation of shortleaf pine communities, seral stages, and overstory density and composition.

Develop regional shortleaf pine networks that share best practices, challenges, and provide a forum for training workshops.

Key Elements of Demonstration Sites

- Easily accessed
- On public and private lands
- Include areas with the most “intact” herbaceous layer where possible.
- Contain all variations of shortleaf pine communities including:
  - seral stages,
  - overstory densities,
  - and overstory species compositions.
- Become a regional network for demonstrating best practices.
- Provide a forum for training workshops

Develop a regional network for demonstrating best practices.

Current Listed Sites on State and Private Lands

Catoosa WMA, TN Wildlife Resources. TN

Hill Farm, LSU Ag Center, LA

Jordan Lake Experimental Forest, NC

Moody Forest, The Nature Conservancy, GA

Picture Creek, NC Heritage Program, NC

Pushmataha WMA, OK Dept of Wildlife, OK

Stockton College Experimental Forest, NJ

Tall Timbers, Research Station and Land Conservancy, FL

Current Listed Sites on Federal Lands

Bankhead National Forest, USDA Forest Service, AL

Daniel Boone National Forest, USDA Forest Service, AR

Great Smokey Mountain National Park, US Park Service, TN

Hoosier National Forest, USDA Forest Service, IN

Mark Twain National Forest, USDA Forest Service, MO

Ouachita National Forest, USDA Forest Service, AR

Piedmont National Wildlife Refuge, US Fish & Wildlife Service, GA

Redstone Arsenal, Department of Defense, AL

Uwharrie National Forest, USDA Forest Service, NC

www.shortleafpine.info – Tools & Resources – Management in Action

SMA-08 | Shortleaf Pine Management Areas | www.shortleafpine.net

Redstone Aresenal, U.S. Army Post

HUNTSVILLE, ALABAMA

Shortleaf pine silvopastural management

Background

Development of a shortleaf pine silvopasture at Redstone Arsenal (RSA) Army Post was used to: restore a once-common native species to the site; explore agroforestry management in the region; and fulfill multiple management objectives desired by RSA (timber, wildlife, water quality, recreation, and cultural resource preservation).

Management Activities

In 2009, plans were made to design three silvopastures at RSA, each encompassing 120 acres. The proposed silvopastural sites were former agricultural fields under cultivation for several decades and used to produce row and forage crops. It was suggested by project managers that developing a silvopasture on a previous agricultural field, versus a clearcut site, may lead to less woody competition in the early years of establishment. In this same year, all the sites were prepped with prescribed fire and a site prep herbicide (Oust ExtraTM).

In the winter of 2010, site vegetation was chopped with a bush hog and shortleaf pine bareroot seedlings were machine-planted (January-February) in double rows, with 6'X8' spacing and 40 foot alleys between double rows. The initial planting resulted in a 45% survival rate, so in 2011 more seedlings were planted to replace the ones that died.

Four to five years later, in 2015, saplings reached 10-12 feet tall and the understory was managed for hay production.

Future management activities include thinning and burning after 18 years and pruning limbs up to 16 feet (up to age 20). The silvopastures will continue to be managed for hay as long as the financial return is better than an ag lease for grazing animals, though this may be considered.

Shortleaf pine rows in the silvopastural management system at Redstone Arsenal are displayed in this image. Credit: Redstone Arsenal, US Army Post

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Shortleaf Pine Initiative

Shortleaf Pine Management Area (SMA) fact sheets highlight regional shortleaf pine management or research projects. Please inquire with project contact/ partners to learn more about a specific management area. For general questions concerning SMAs or the www.shortleafpine.net website, please contact: **Holly Campbell, hcampbell@sref.info**

The Shortleaf Pine Initiative represents a broad range of federal, state, and private agencies and organizations currently working to promote shortleaf pine ecosystem restoration. For more information about shortleaf restoration or the Initiative, please visit: **www.shortleafpine.net**

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Southern Regional Extension Forestry

Southern Regional Extension Forestry (SREF) is a diverse team of trained natural resource educators, IT specialists, graphic designers, communications and marketing experts, and media and content producers. SREF works closely with the Southern Land Grant University System, US Forest Service, and state forestry agencies to develop content, tools and support for the forestry and natural resource community. Improving the efficiency, effectiveness and relevance of supporting institutions is a primary goal at SREF.

To find out more about SREF programs please visit **www.sref.info** or contact: **William G. Hubbard | Southern Regional Extension Forester | whubbard@sref.info.**

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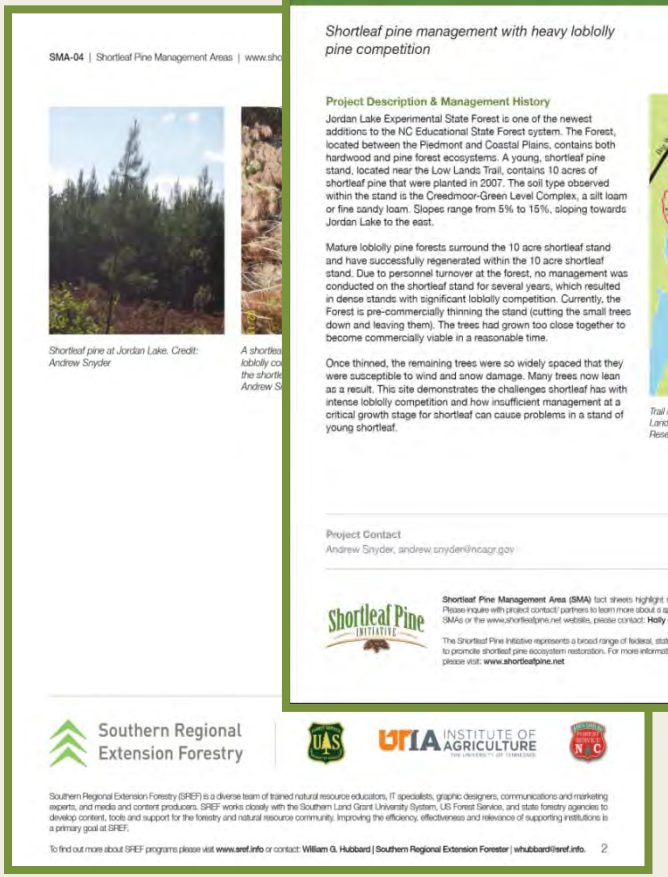

SMA-04 | Shortleaf Pine Management Areas | www.sho

Shortleaf pine at Jordan Lake. Credit: Andrew Snyder

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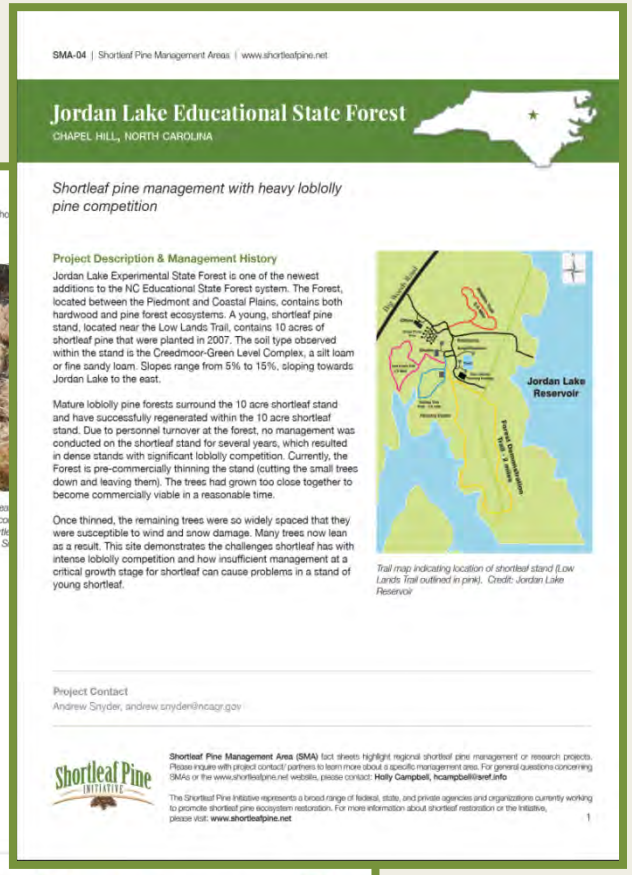
Southern Regional Extension Forestry

INSTITUTE OF AGRICULTURE



SMA-04 | Shortleaf Pine Management Areas | www.shortleafpine.net

Jordan Lake Educational State Forest

CHAPEL HILL, NORTH CAROLINA

Shortleaf pine management with heavy loblolly pine competition

Project Description & Management History

Jordan Lake Experimental State Forest is one of the newest additions to the NC Educational State Forest system. The Forest, located between the Piedmont and Coastal Plains, contains both hardwood and pine forest ecosystems. A young, shortleaf pine stand, located near the Low Lands Trail, contains 10 acres of shortleaf pine that were planted in 2007. The soil type observed within the stand is the Creedmoor-Green Level Complex, a silt loam or fine sandy loam. Slopes range from 5% to 15%, sloping towards Jordan Lake to the east.

Mature loblolly pine forests surround the 10 acre shortleaf stand and have successfully regenerated within the 10 acre shortleaf stand. Due to personnel turnover at the forest, no management was conducted on the shortleaf stand for several years, which resulted in dense stands with significant loblolly competition. Currently, the Forest is pre-commercially thinning the stand (cutting the small trees down and leaving them). The trees had grown too close together to become commercially viable in a reasonable time.

Once thinned, the remaining trees were so widely spaced that they were susceptible to wind and snow damage. Many trees now lean as a result. This site demonstrates the challenges shortleaf has with intense loblolly competition and how insufficient management at a critical growth stage for shortleaf can cause problems in a stand of young shortleaf.

Trail map indicating location of shortleaf stand (Low Lands Trail outlined in pink). Credit: Jordan Lake Reservoir

Project Contact

Andrew Snyder, andrew.snyder@ncagr.gov

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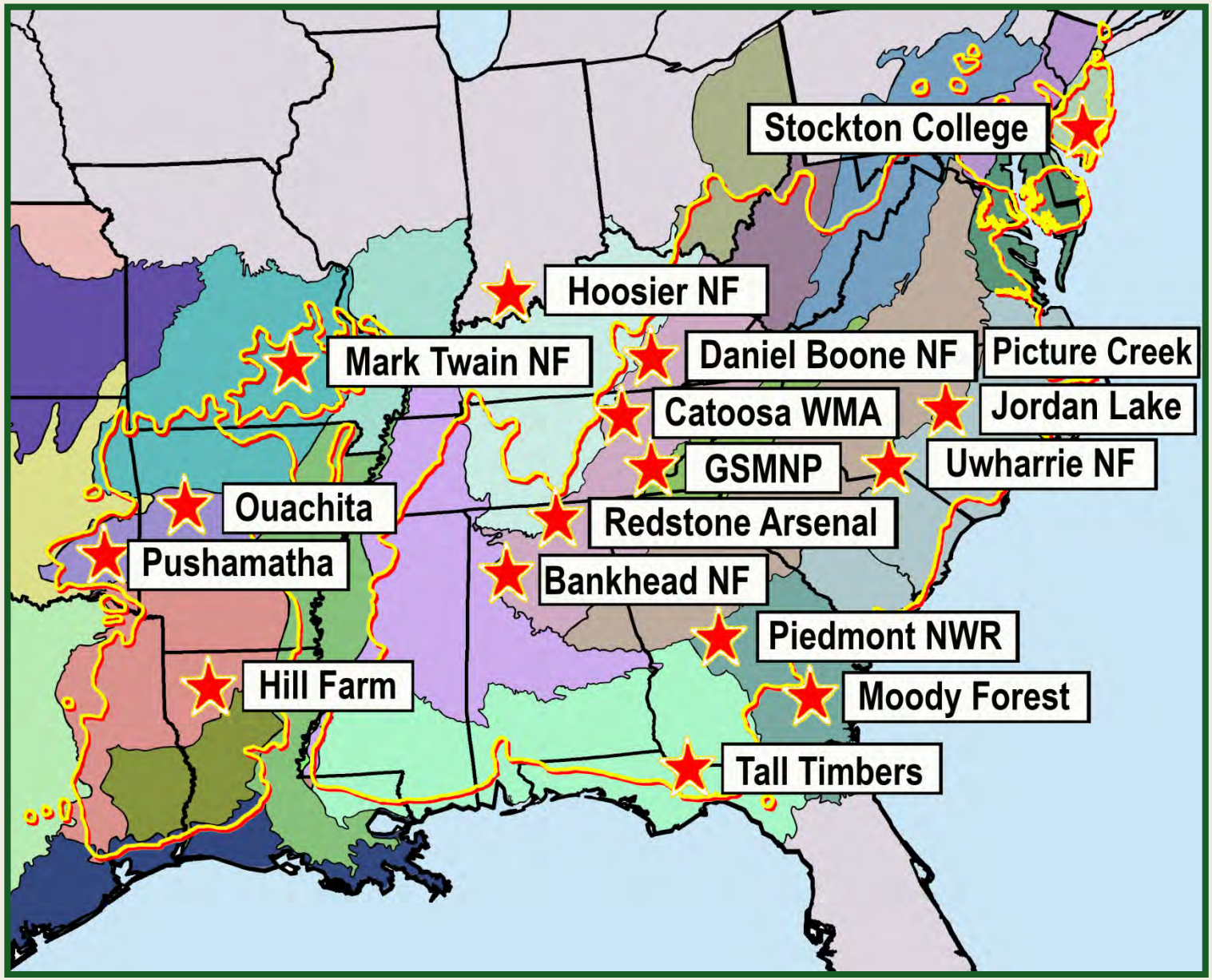
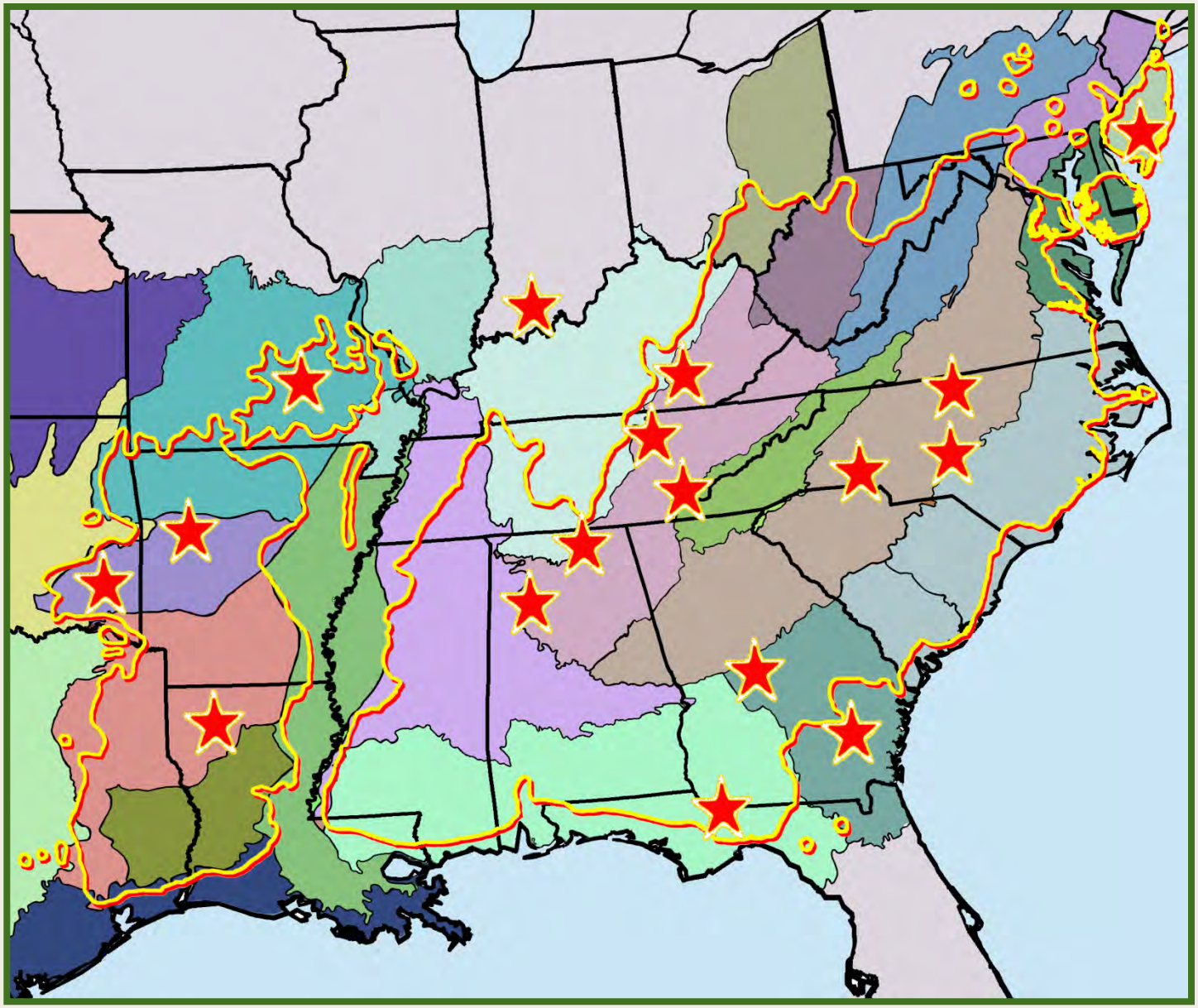
Current Best Practice Demonstration Sites Listed in the Regional Network



Location of Current Best Practice Demonstration Sites Listed in the Regional Network



Current Status of Demonstration Sites On All Variations of Shortleaf Pine Communities

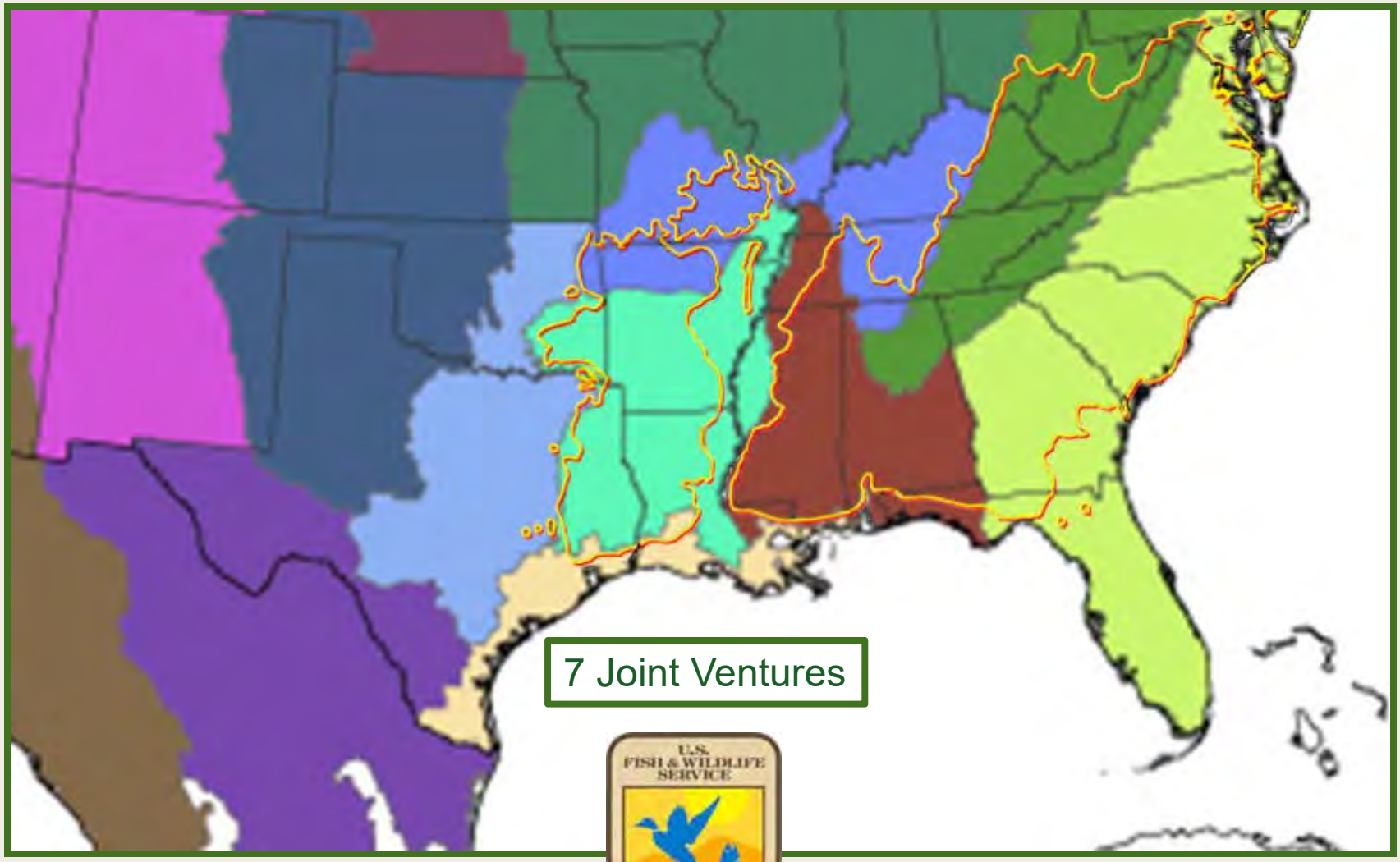
Stands Representing:

Seral stages:	Not Complete
Overstory Densities:	Not Complete
Overstory Species Compositions and, Ecotypes:	Not Complete

How Best to Determine How Many Ecotypes to Include?

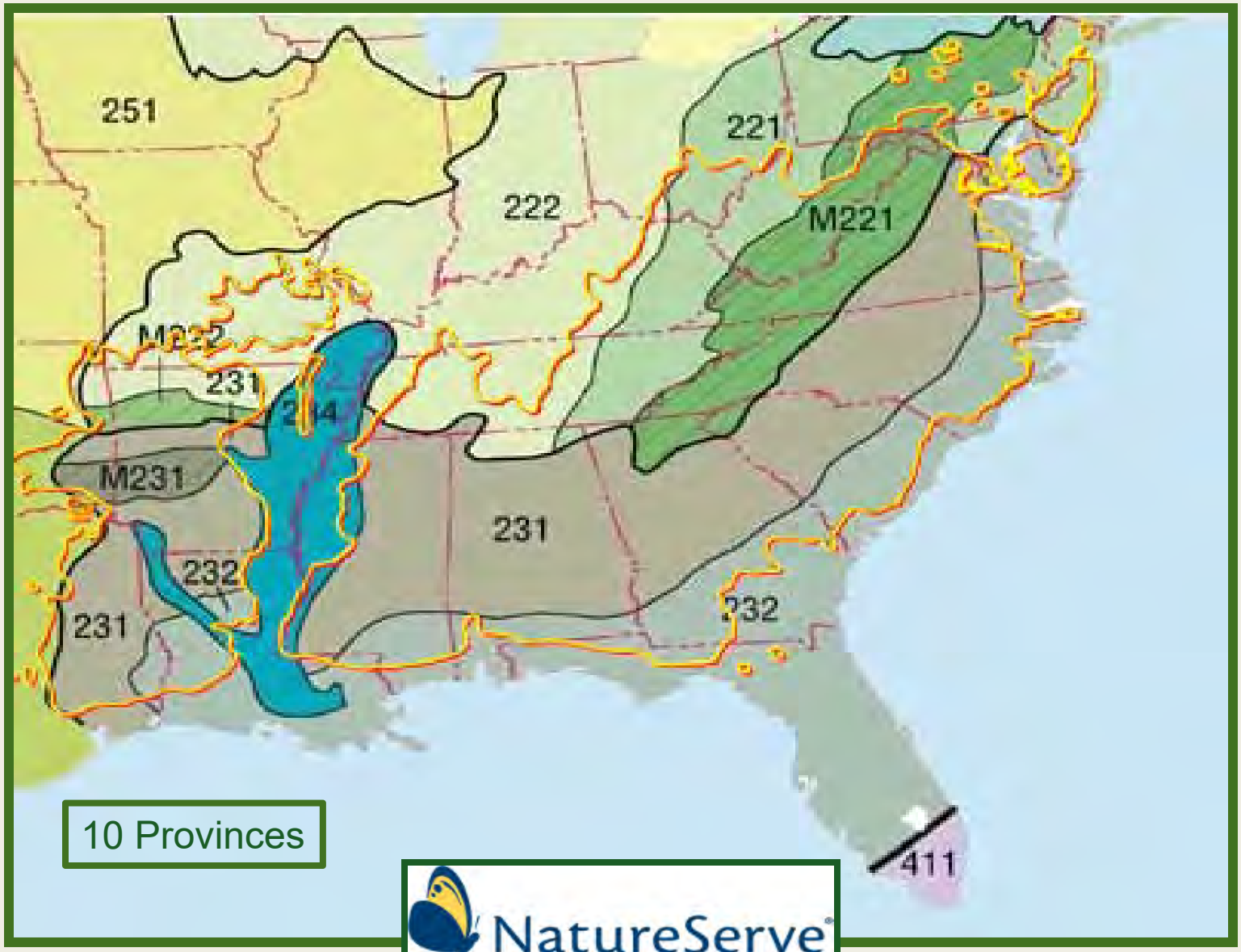
Seral stages:	Consensus Found in the Literature
Overstory Densities:	Consensus Found in the Literature
Overstory Composition:	Consensus Found in the Literature
Ecotypes:	No Consensus in the Literature

Migratory Bird
JOINT VENTURES



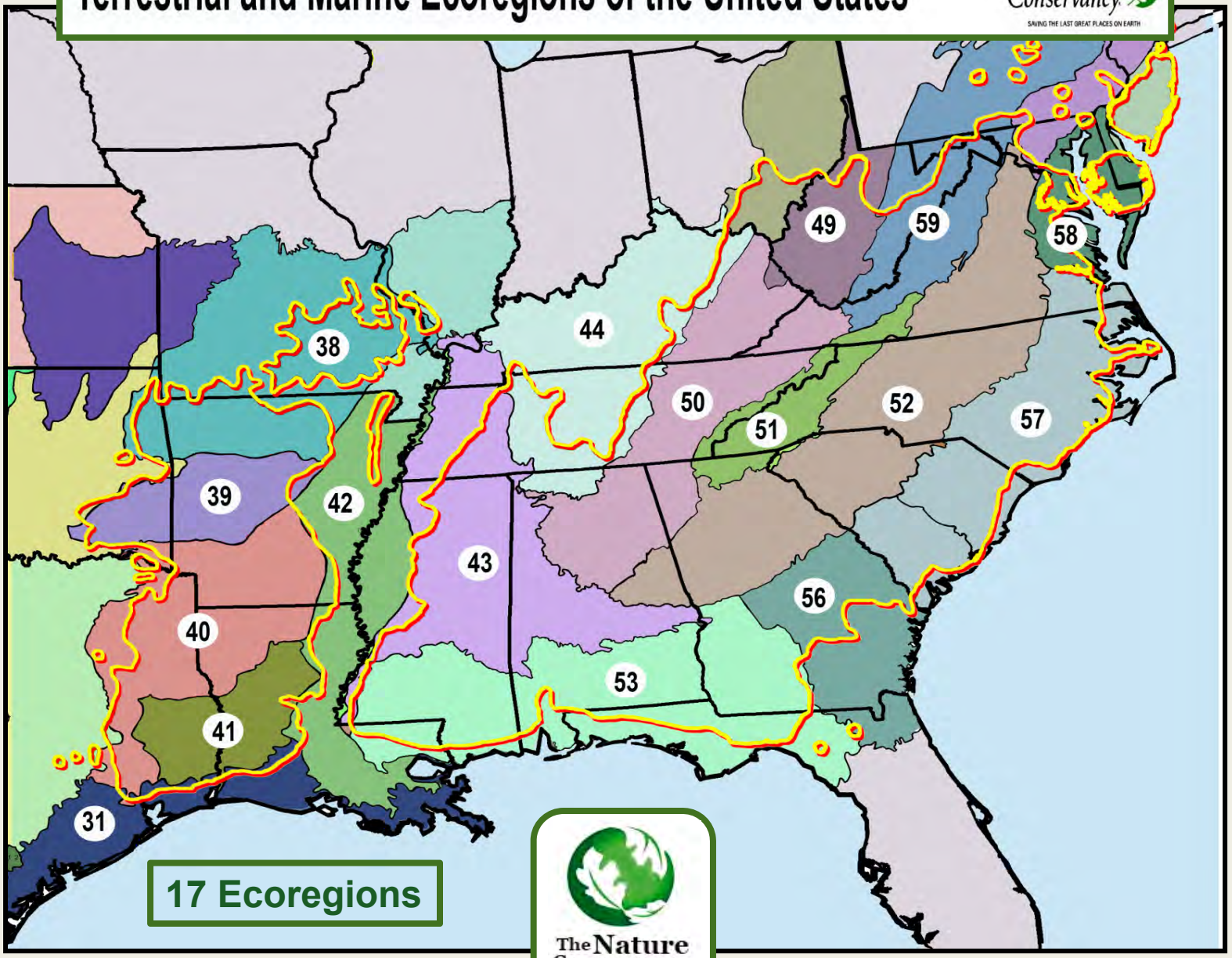
U.S. FISH & WILDLIFE SERVICE

Ecoregions of the United States
Provinces



Terrestrial and Marine Ecoregions of the United States

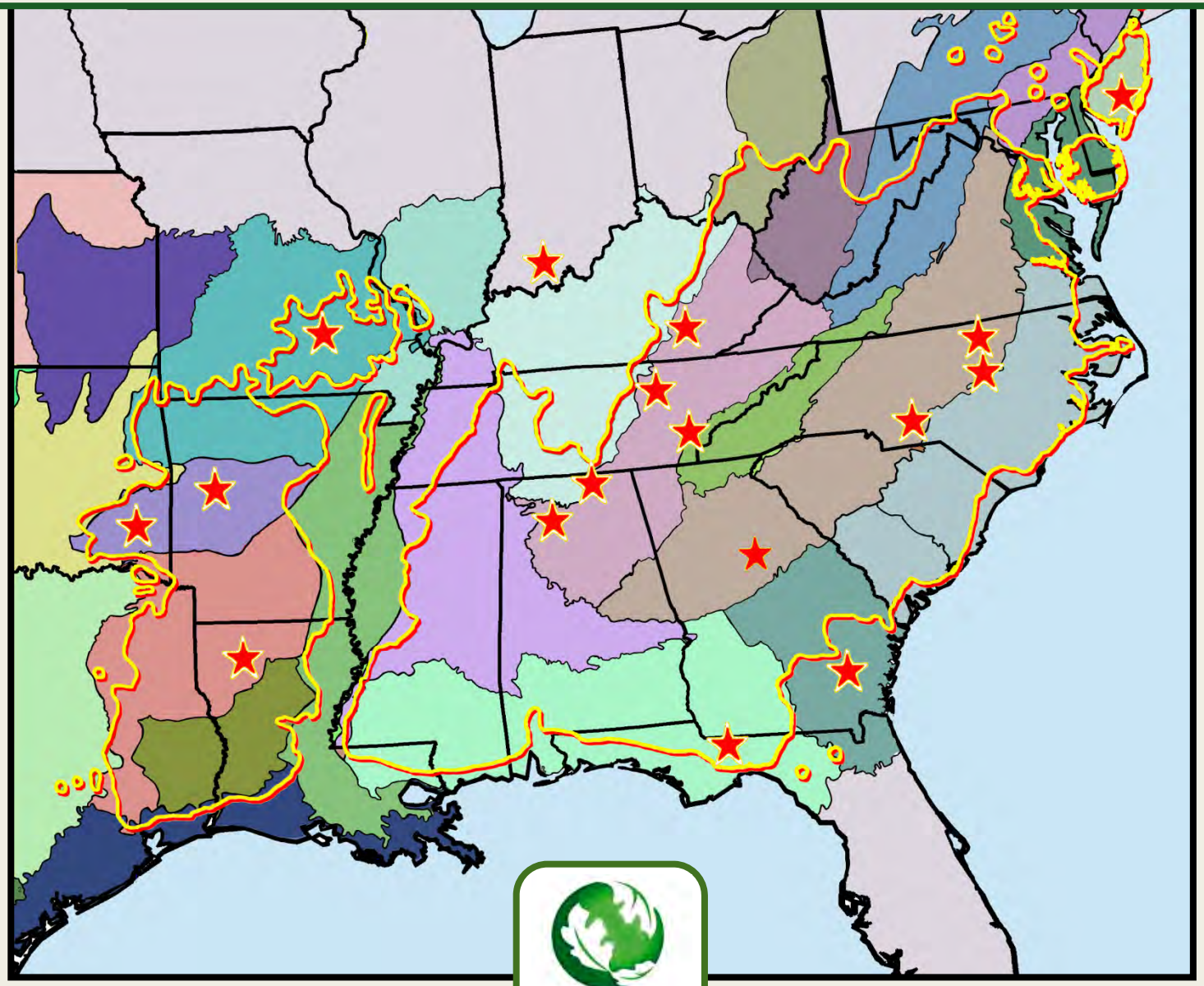
The Nature Conservancy
SAVING THE LAST GREAT PLACES ON EARTH



17 Ecoregions

The Nature Conservancy
Protecting nature. Protecting life

Only 9 out of the 17 TNC Ecotypes Are Currently Listed



The Nature Conservancy
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Funding Opportunities for Establishing Demonstration Sites

USDA Forest Service
Stewardship Contracting

Stewardship contracting helps achieve land management goals while meeting local and rural community needs

It focuses on the "end result" ecosystem benefits and outcomes, rather than on what's removed from the land.

Stewardship contracting combines restoration activities on National Forest System lands into contract or agreement packages.

Forest Service staff collaborate to build community partnership with cooperating Federal, State and local government agencies; tribal governments; nongovernmental organizations; and any interested groups or individuals to develop projects.

Examples of interested groups or individuals include resource advisory committees, fire safe councils, resource conservation districts, conservation groups, and watershed councils.

Ability to bundle several contracts into one and treat at a larger landscape scale.

Ability to trade goods for services.

Contract terms of up to 10 years.

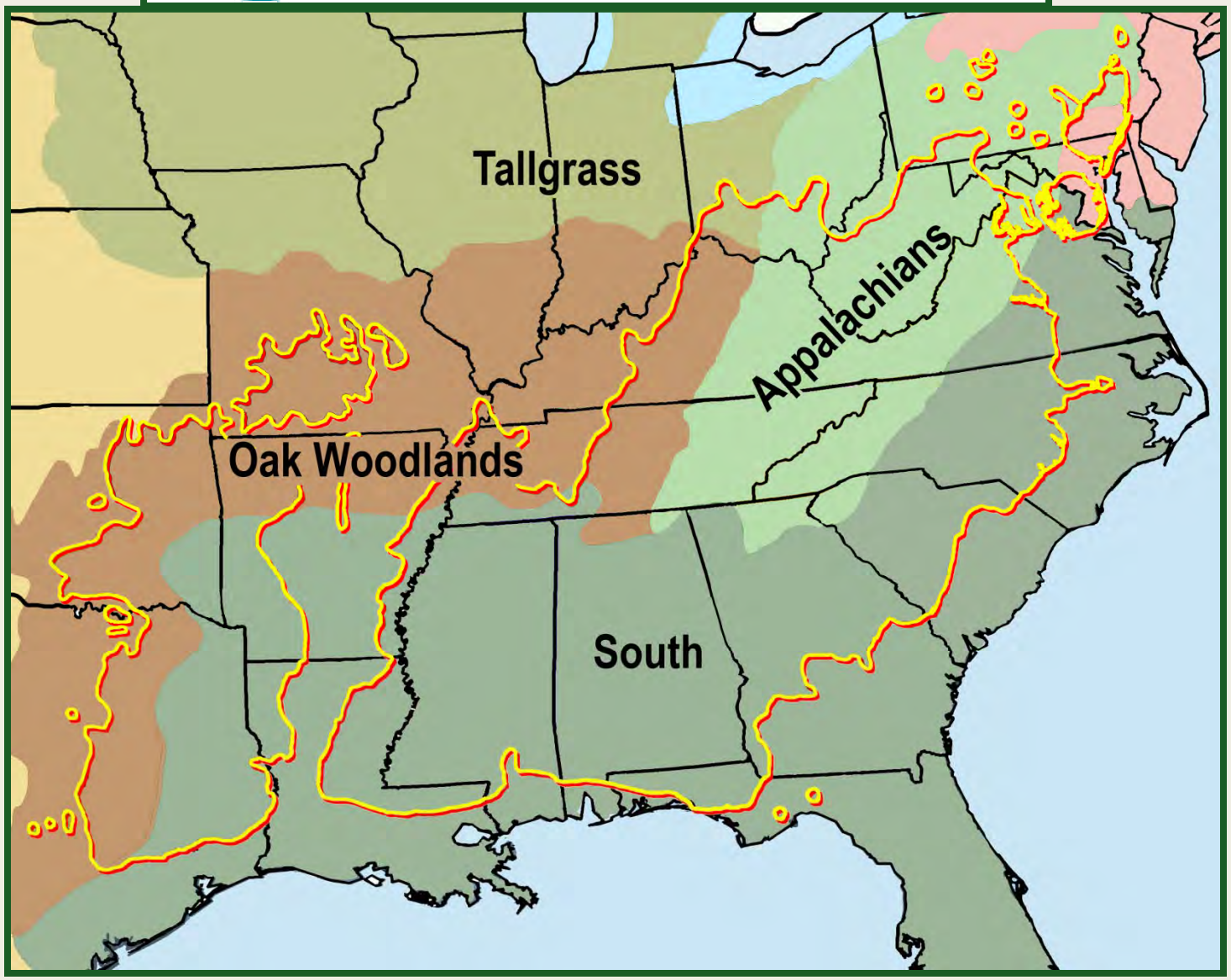
Project proposals can be initiated from external sources as well as from within the agency.

There are organizations interested in completing restoration treatments through an agreement.

The partner would have to provide at least a 20% match, with direct and indirect costs counting towards the match.

FIRESCIENCE.GOV

Research Supporting Sound Decisions



Funding Opportunities for Establishing Demonstration Sites

FIRESCIENCE.GOV
Research Supporting Sound Decisions

Grants Issued Through Funding Opportunity Notices (FONs)

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

U.S. FISH & WILDLIFE SERVICE

FOREST SERVICE DEPARTMENT OF AGRICULTURE

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF INDIAN AFFAIRS 1824

U.S. DEPARTMENT OF THE INTERIOR MARCH 3, 1849

USGS science for a changing world

16-3-01 New Science Initiative – Ecological and social dimensions of resilient landscapes

The Joint Fire Science Program (JFSP) is interested in sponsoring projects that explore and better define the concept of resilient landscapes, especially considering changing climates.

New approaches to stimulate new and creative thinking regarding the concept, definition, management, and measurement of resilient landscapes. Investigators are encouraged to work in collaborative cross-disciplinary teams, including both ecological and social scientists.

Primary Goals:

- **Restore and maintain landscapes across all jurisdictions to be resilient to fire-related disturbances in accordance with management objectives.**
- **Actively manage the land to make it more resilient to disturbance, in accordance with management objectives. "**