ACCELERATING LONGLEAF RESTORATION

Collaborative Forest Landscape Restoration Program (CFLRP)

U.S.D.A. Forest Service
National Forests in Florida

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Susan Jeheber-Matthews

Background:
Department and Agency Priority

"Our shared vision begins with restoration. Restoration means managing forest lands first and foremost to protect our water resources, while making our forests more resilient to climate change."

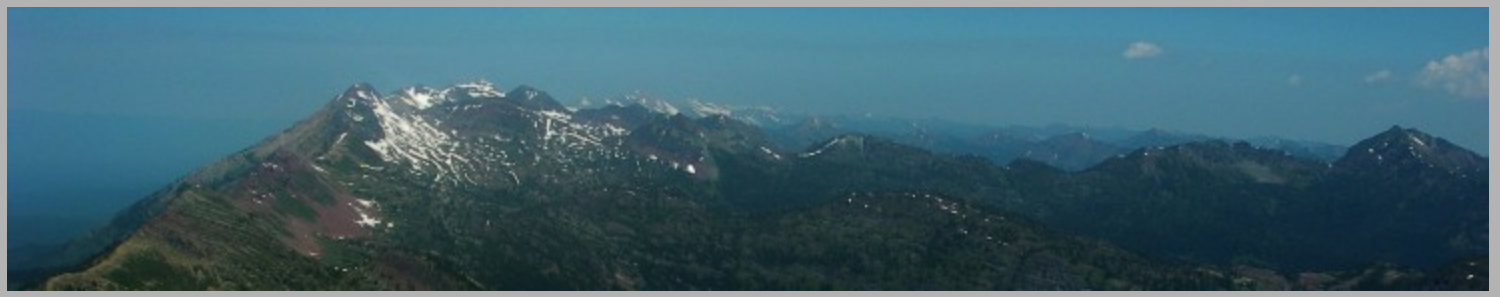
Tom Vilsack
USDA Secretary

"We will increase our focus on restoration of our forest and grassland ecosystems; restoration to increase resilience to ensure these systems are able to adapt to changes in climate."

Tom Tidwell
Forest Service Chief

Background:

The Omnibus Act of 2009



- The Collaborative Forest Landscape Restoration Program was authorized in Title IV of the Omnibus Public Land Management Act of 2009 (Omnibus Act)

- A Federal Advisory Committee was established to evaluate and recommend proposals for funding. The panel met in July 2010 in an open meeting and recommended 10 projects for funding

Background: Purpose of CFLR

- From Title IV of the Omnibus Act: "The purpose of this title is to encourage the collaborative, science-based ecosystem restoration of priority forest landscapes through a process that
  - encourages ecological, economic, and social sustainability;
  - leverages local resources with national and private resources;

- Requirements include:
  - A 10 year restoration strategy that is complete or substantially complete that identifies and prioritizes ecological restoration treatments across a 50,000 acre or larger landscape on primarily National Forest System lands
  - Must be developed and implemented through a collaborative process
  - Incorporates best available science and application tools
  - demonstrates the degree to which--
    - Various ecological restoration techniques--
      - achieve ecological and watershed health objectives; and
      - affect wildfire activity and management costs; and
    - the use of forest restoration byproducts can offset treatment costs while benefitting local rural economies and improving forest health."

Background: 2010 Projects

Region	Project Name
1	Southwestern Crown of the Continent
1	Selway- Middle Fork Clearwater
2	Uncompahgre Plateau
2	Colorado Front Range
3	4 Forest Restoration Initiative

Region	Project Name
3	Southwest Jemez Mountains
5	Dinkey Landscape
6	Deschutes Skyline
6	Tapash
8	Accelerating Longleaf Pine Restoration

Background: 2012 Projects

Region	Project Name
1	Kootenai Valley Resource Initiative
3	Zuni Mountain
4	Weiser-Little Salmon Headquarters
5	Burney-Hat Creek Basins Project
5	Amador-Calaveras Consensus Group Cornerstone Project
6	Northeast Washington Forest Vision 2020
8	Ozark Highlands Ecosystem Restoration

Region	Project Name
6	Lakeview Stewardship CFLR Proposal
6	Southern Blues Restoration Coalition
8	Shortleaf-Bluestem Community
8	Grandfather Restoration Project
9	Missouri Pine-Oak Woodlands Restoration Project
8	Longleaf Pine Ecosystem Restoration and Hazardous Fuels Reduction

Why the Osceola NF?

WILDFIRE RISK

Why the Osceola NF?

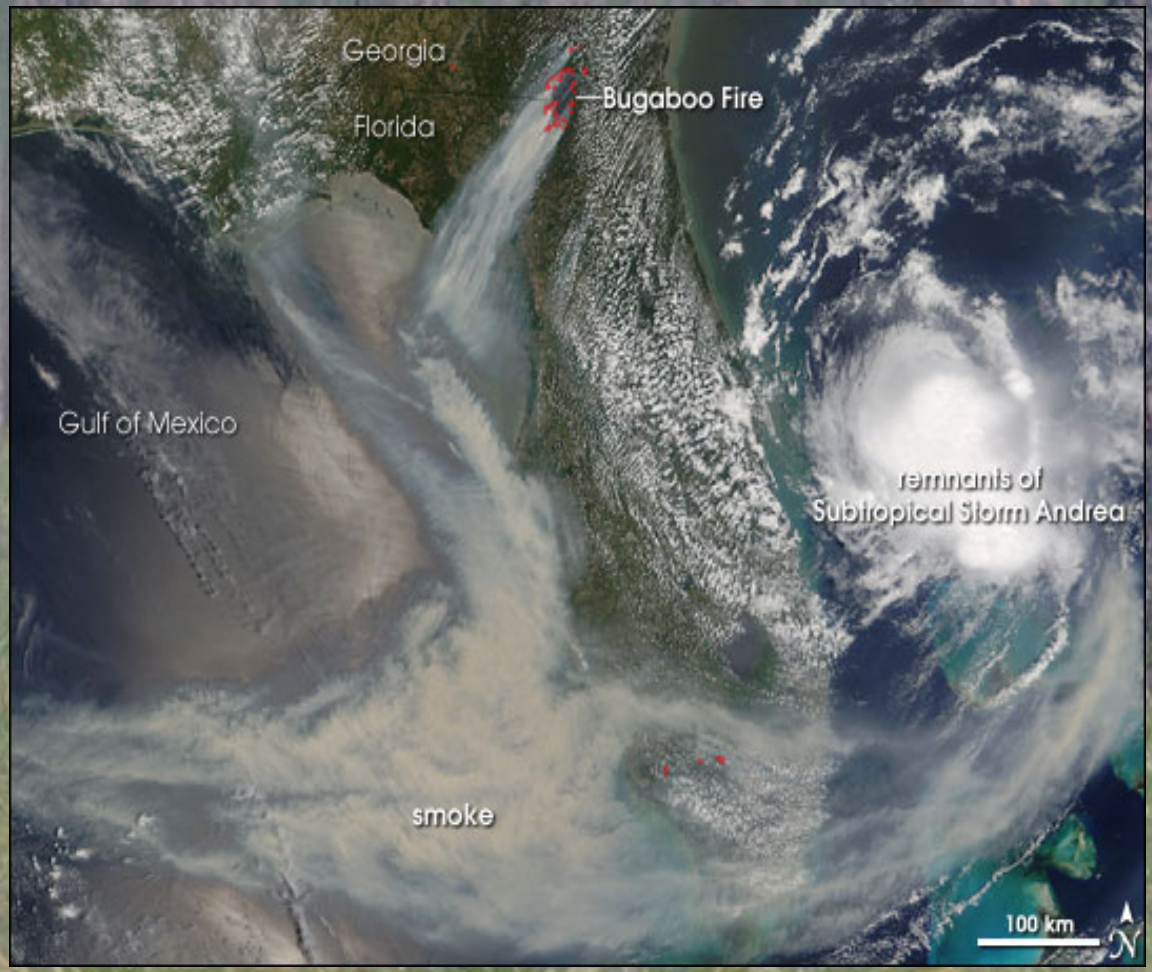
The Osceola and adjacent lands have been plagued by wildfires

Why the Osceola NF?

Prior to CFLRP, over 31 million dollars were expended on wildfire suppression with a wildfire rehabilitation cost of 3.6 million dollars

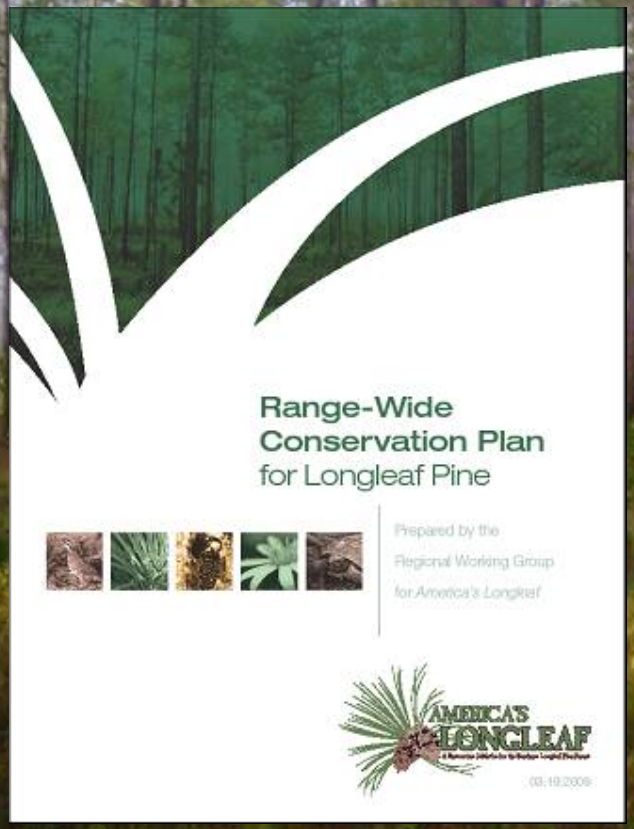
Why The Osceola National Forest

The Bugaboo Fire in 2007 was the largest wildfire east of the Mississippi and closed Interstates10 & 75 for days



Focus on Longleaf Pine

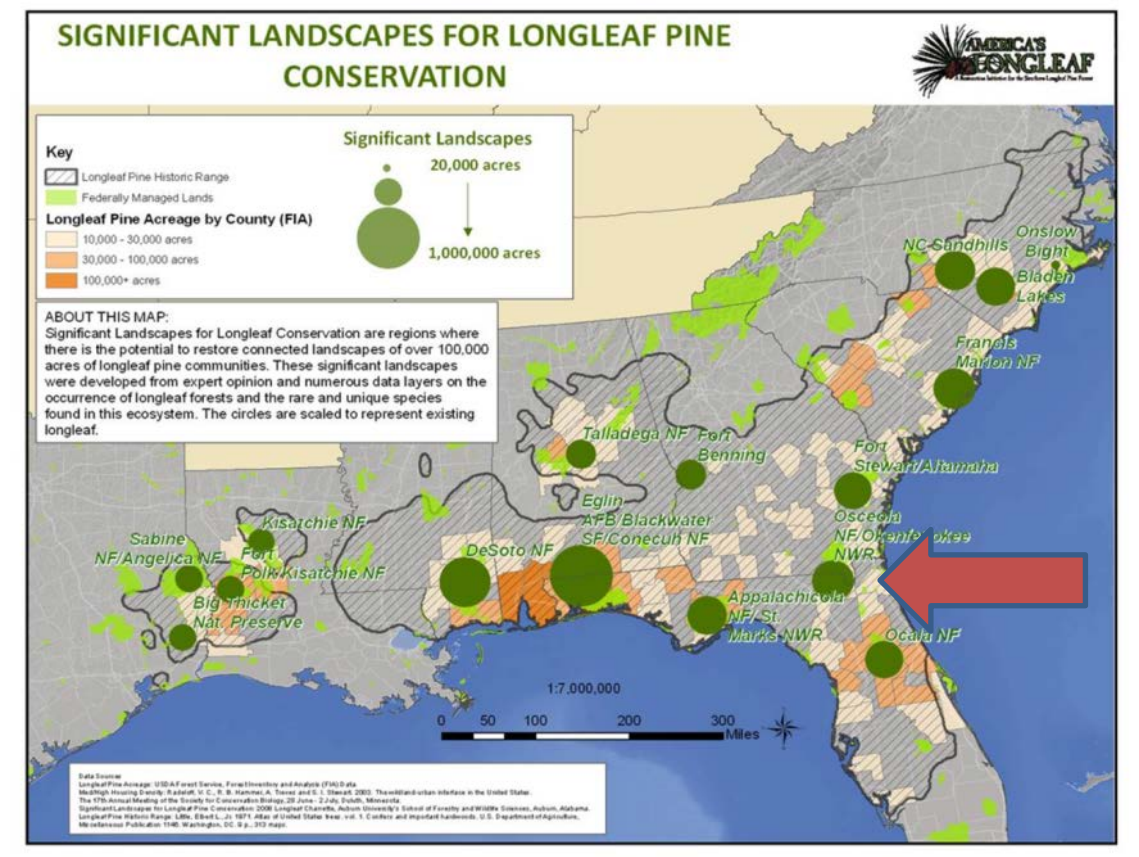
The Range-wide Conservation Plan For Longleaf Pine



- Developed by a Regional Working Group representing 22 organizations
- Supported by USDA Forest Service, Dept. of Defense, and U.S. Fish & Wildlife Service
- Released in March 2009

Why The Osceola National Forest

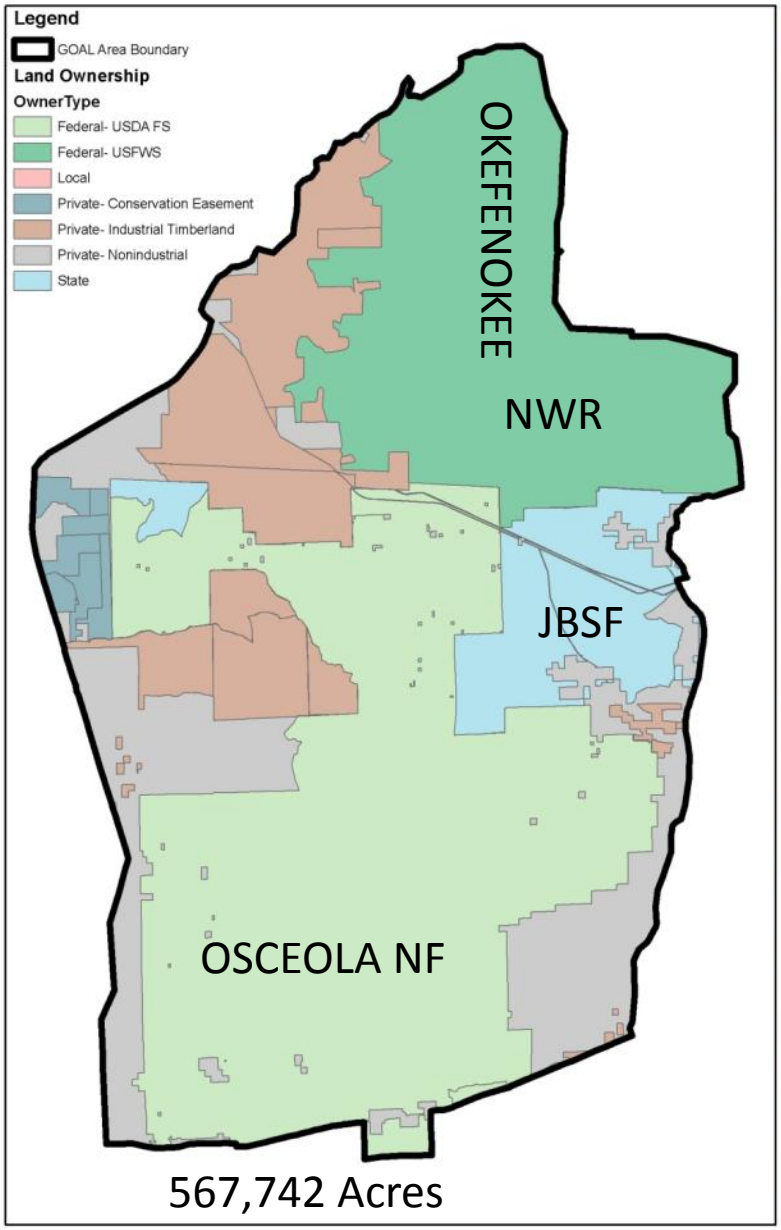
- The Forest is located within one of the significant longleaf pine conservation areas



The Longleaf Ecosystem Connects Many Focus Areas

- **T&E and Sensitive Species Habitat**
- **Climate Change mitigation**
- **Woody biomass developments**
- **Watershed health**
- **Economic viability**

CFLR GOAL AREA LAND OWNERSHIP



CFLR GOAL Area
Land Ownership

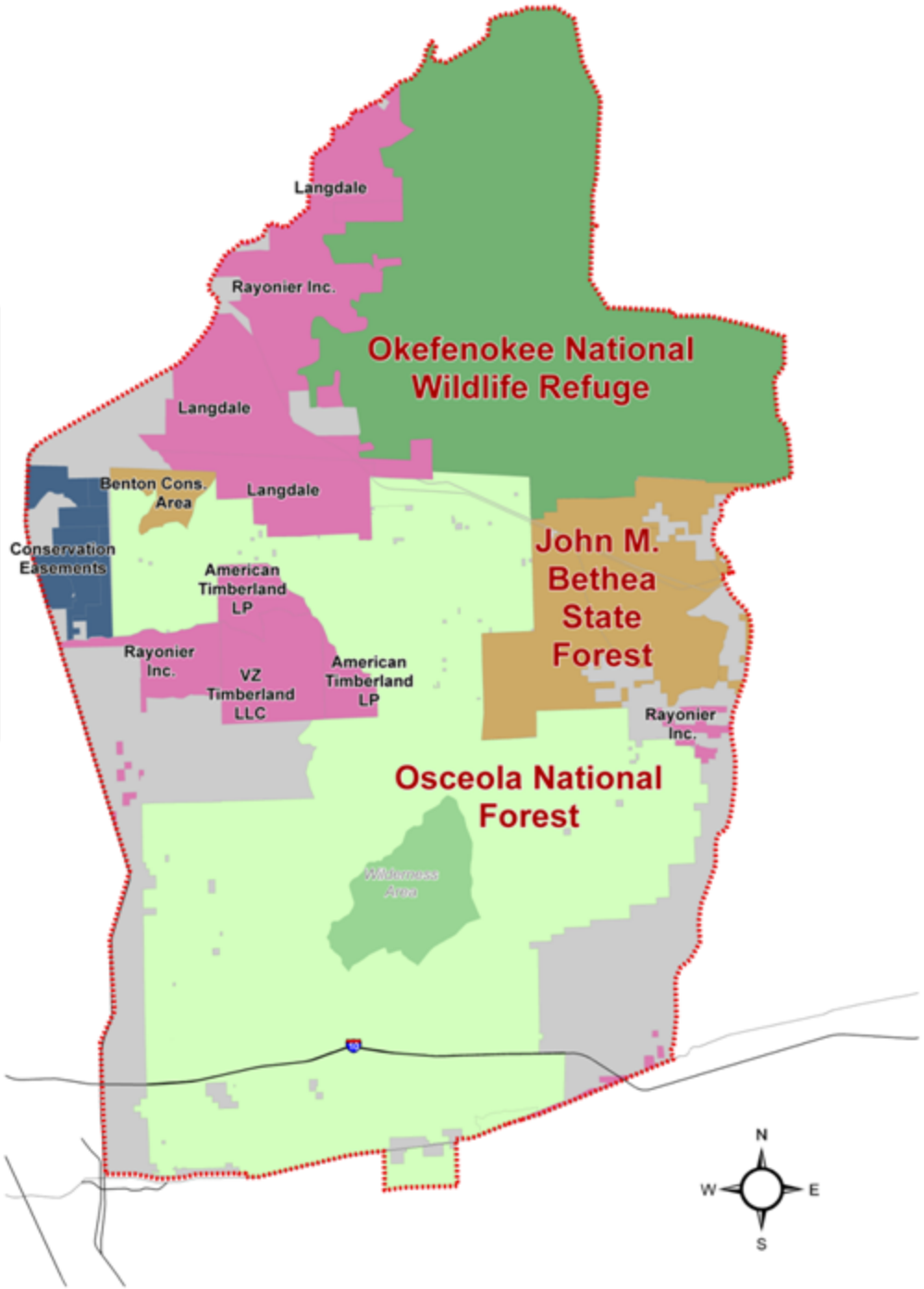
Legend

CFLRP Landscape

Land Ownership

OwnerType

- Federal- USDA FS
- Federal- USFWS
- Local
- Private- Conservation Easement
- Private- Industrial Timberland
- Private- Nonindustrial
- State



Land Owner	Acres	Percent
Federal	355,161	62.6
State	41,632	7.3
Private Cons. Easement	9,362	1.6
Private Ind. Timber	75,098	13.2
Private Nonindustrial	86,489	15.2
Total Acres	**567,742**	

Planning and Prioritization

How do we assess current conditions and prioritize treatments?

Planning and Prioritization

- The forest developed an Ecological Condition Model (ECM) to assess current conditions relative to desired conditions using prioritization models for fire, timber harvest, and mechanical fuel reduction

Purpose of ECM

Dramatically increase the health of forest ecosystems at a landscape scale by:

- Assessing current Ecological Condition vs. Desired Condition using ranked tiers
- Maximizing integration of program areas and dollars
- Prioritizing treatment areas and activities
- Balancing restoration with maintenance
- Increasing management efficiencies

Desired Condition of Pine Flatwoods

- Fire: Vegetation patterns determined by Rx burning and sustainable harvest
- Overstory: Mature pine forest with multiple age classes
- Midstory: No hardwood midstory
- Understory: Intact and healthy native pyrogenic groundcover
- Wildlife: Healthy populations of typical native species

Tier Classification

Tier 1
Excellent/ Maintenance Condition

Tier 2 Good/ Maintenance Condition

Tier 3 Fair/ Transitional Condition, Some Restoration Required

Tier Classification

Tier 4 Poor Condition,
Restoration Required

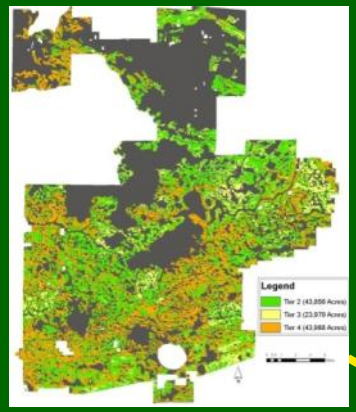
Tier 5 Very Poor Condition,
Restoration Required

OSCEOLA ECM Inputs

- **Basal Area**
- **Stand age**
- **Fire**
  - –Fire severity
  - –Number of fires
  - –Time since last fire

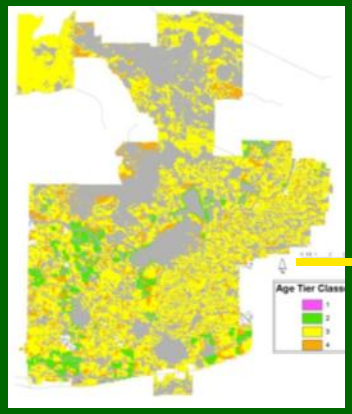
ECM Input

Basal Area Tier Score



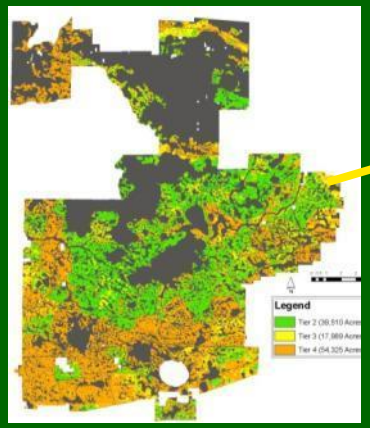
40%

Stand Age Tier Score



20%

Overall Fire Tier Score



40%

2009 ECM Results

The ECM revealed that almost 50% of the Osceola NF is in poor ecological condition

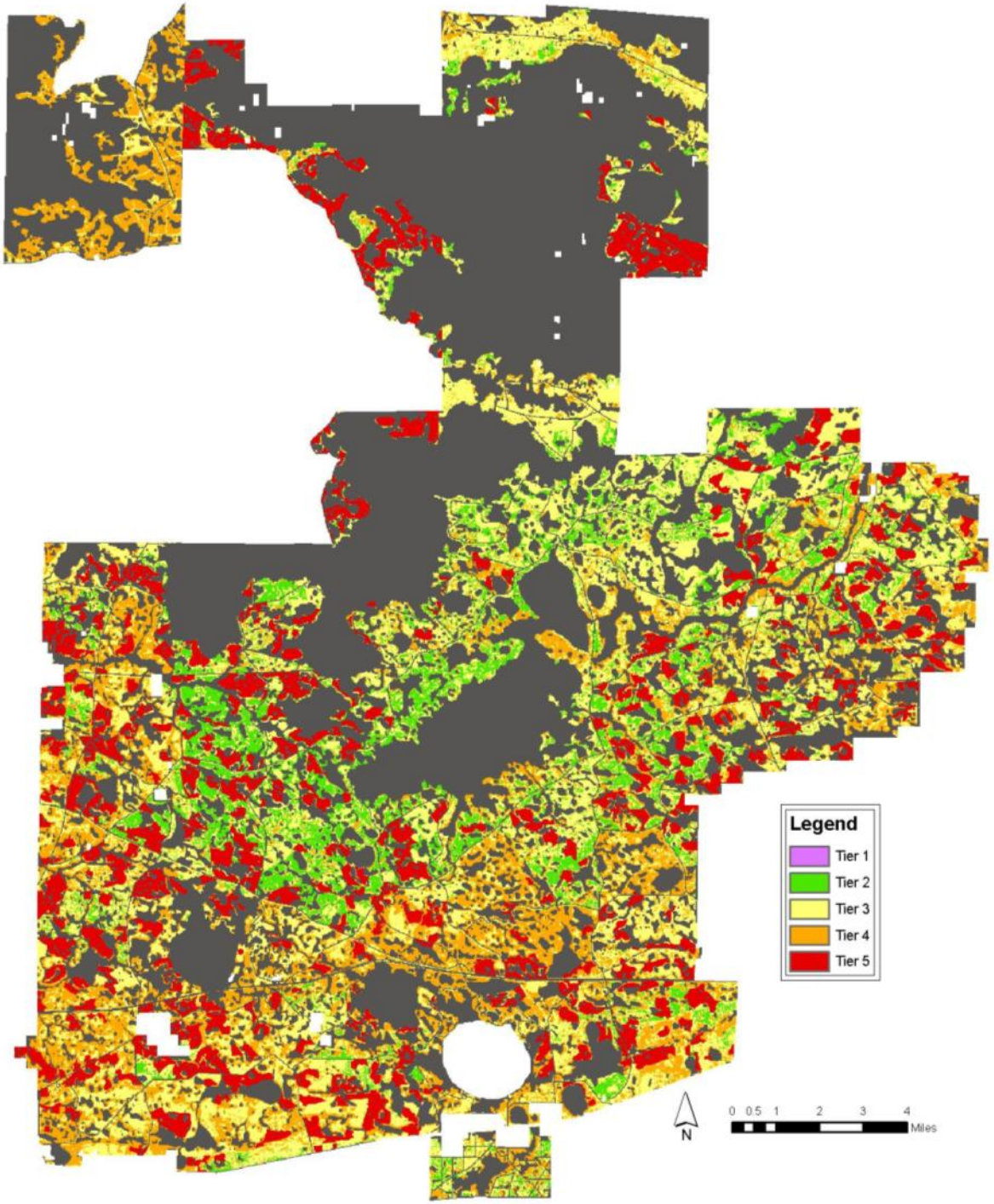
2009 ECM Tier Classes

Flatwoods Condition

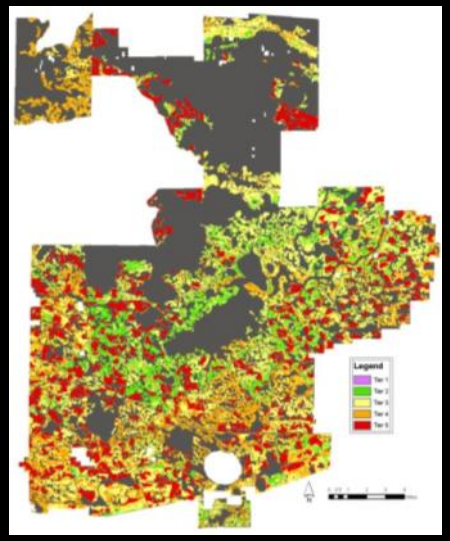
Good-Excellent (Tier 1,2)
13%

Transitional (Tier 3)
40%

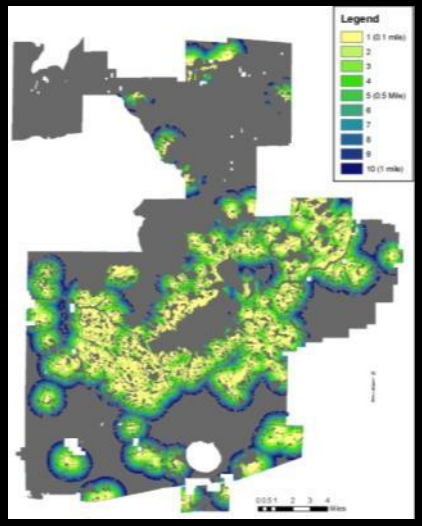
Poor-Very Poor (Tier 4,5)
47%



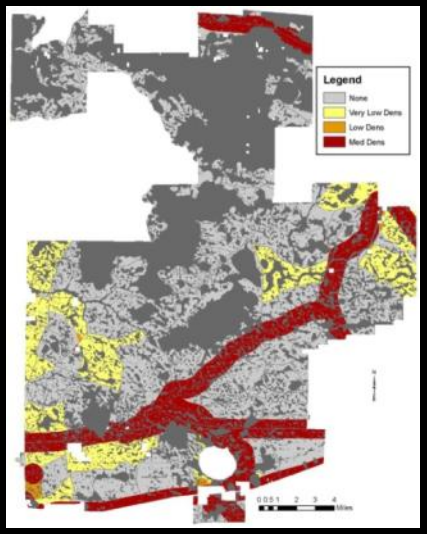
Prioritization Input Layers:



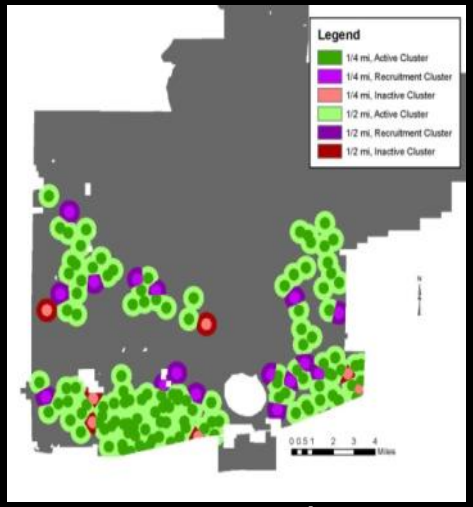
ECM Tiers



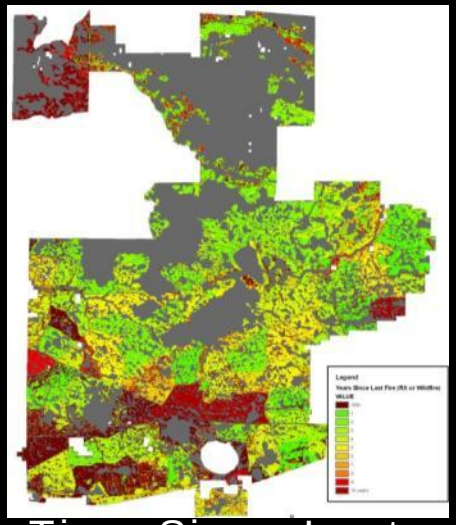
Proximity to ECM Tier 1 and Tier 2 Areas



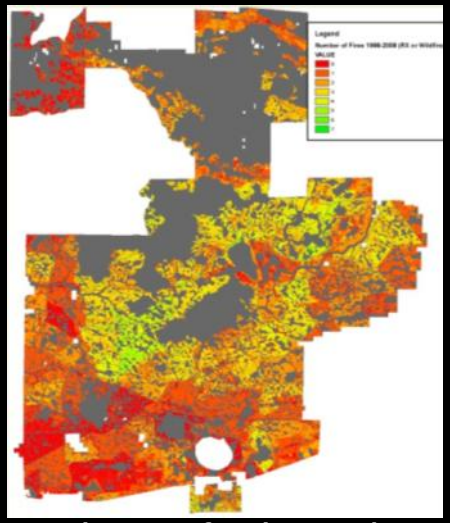
WUI



RCW Foraging Areas



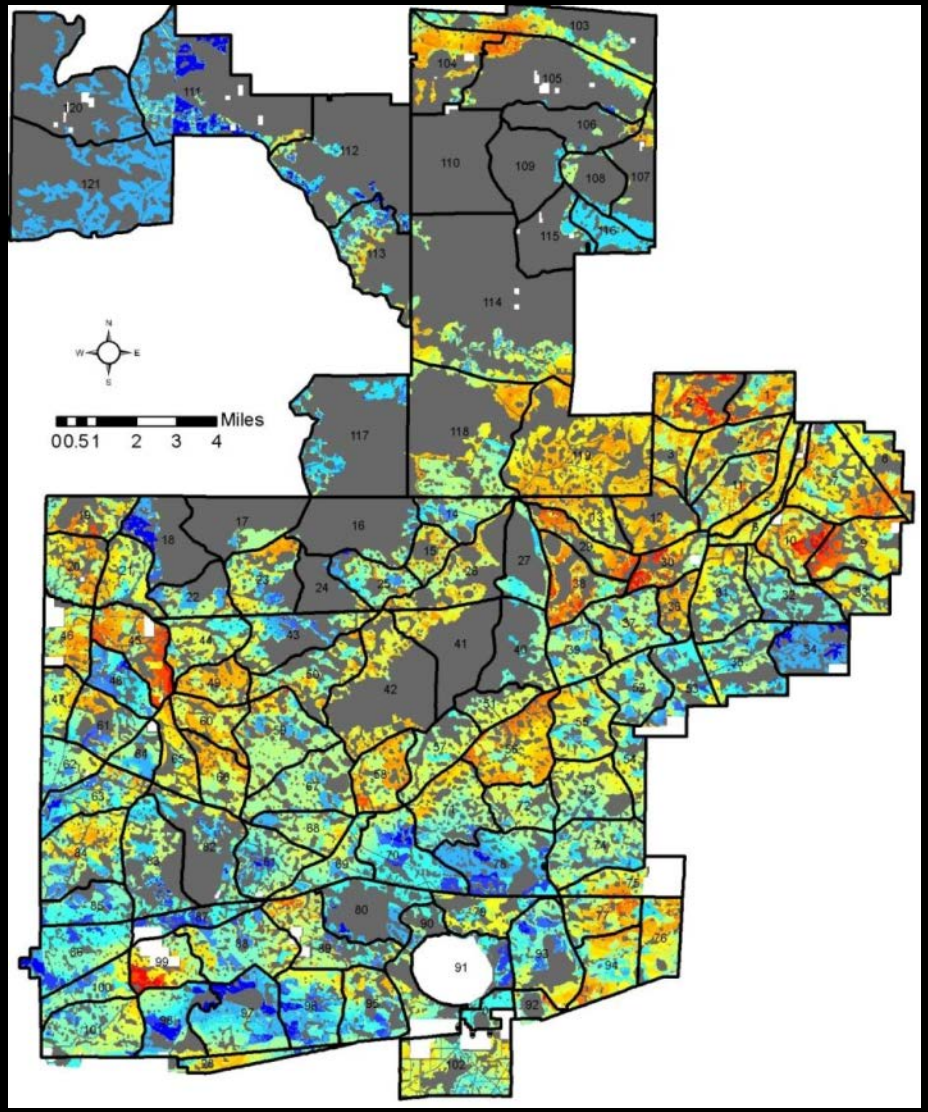
Time Since Last Fire



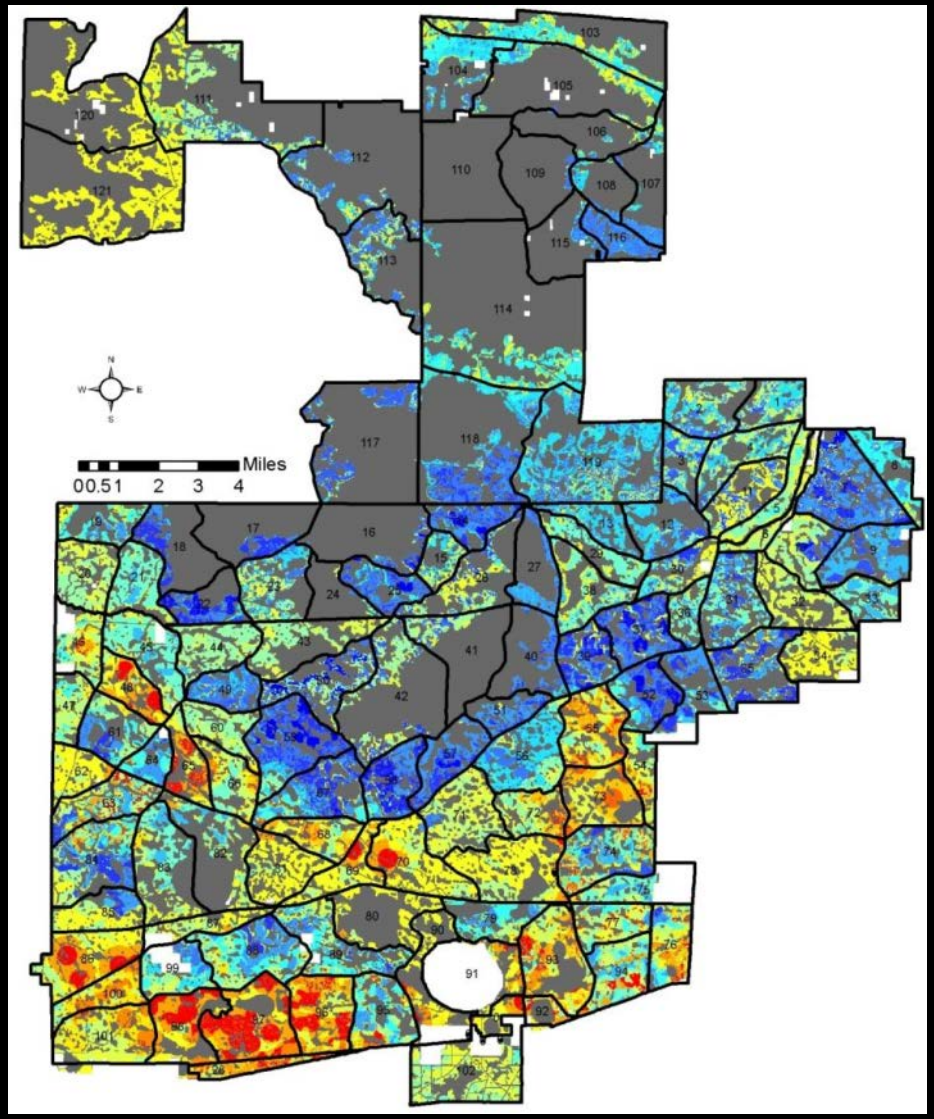
Number of Fires (1998-2009)

Prioritization Models:

Fire Prioritization (Maintenance Emphasis)

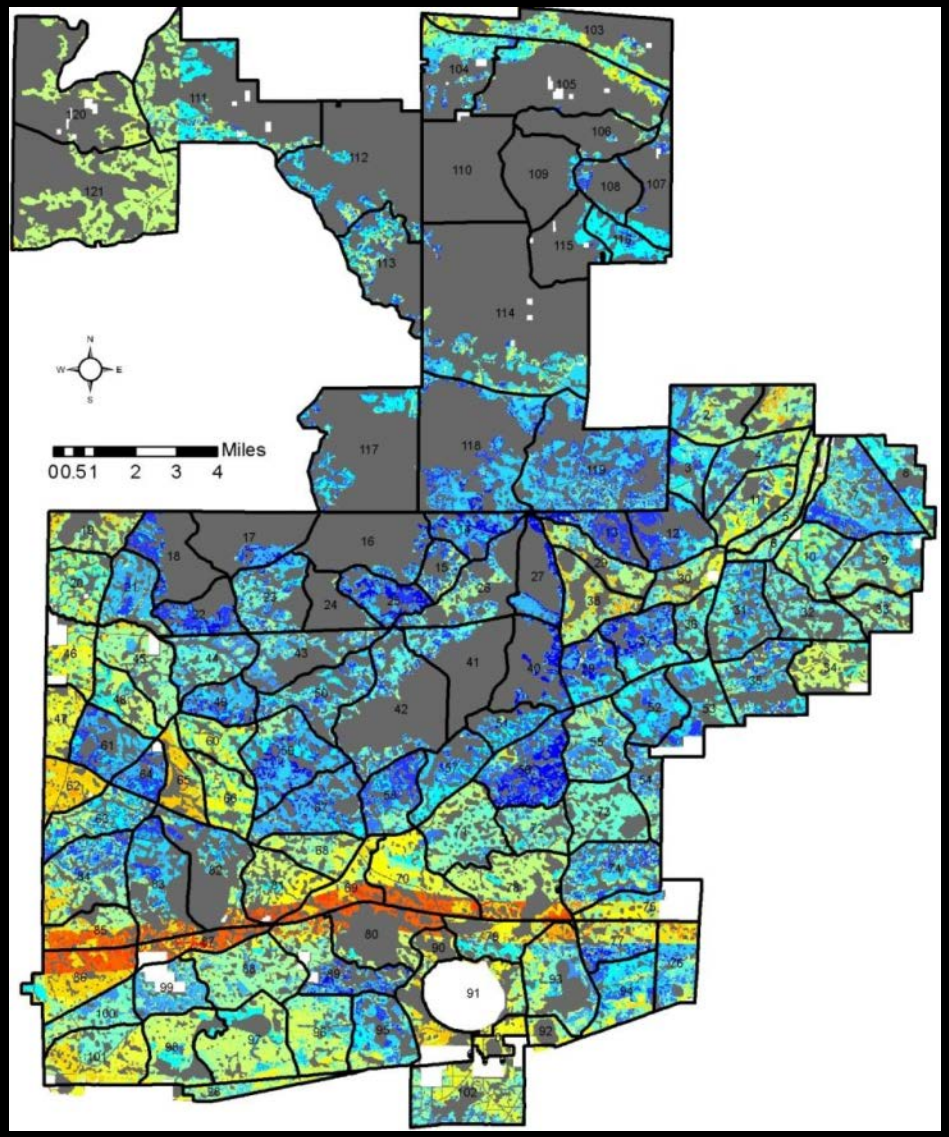


Fire Prioritization (Heavy Fuels and RCW)

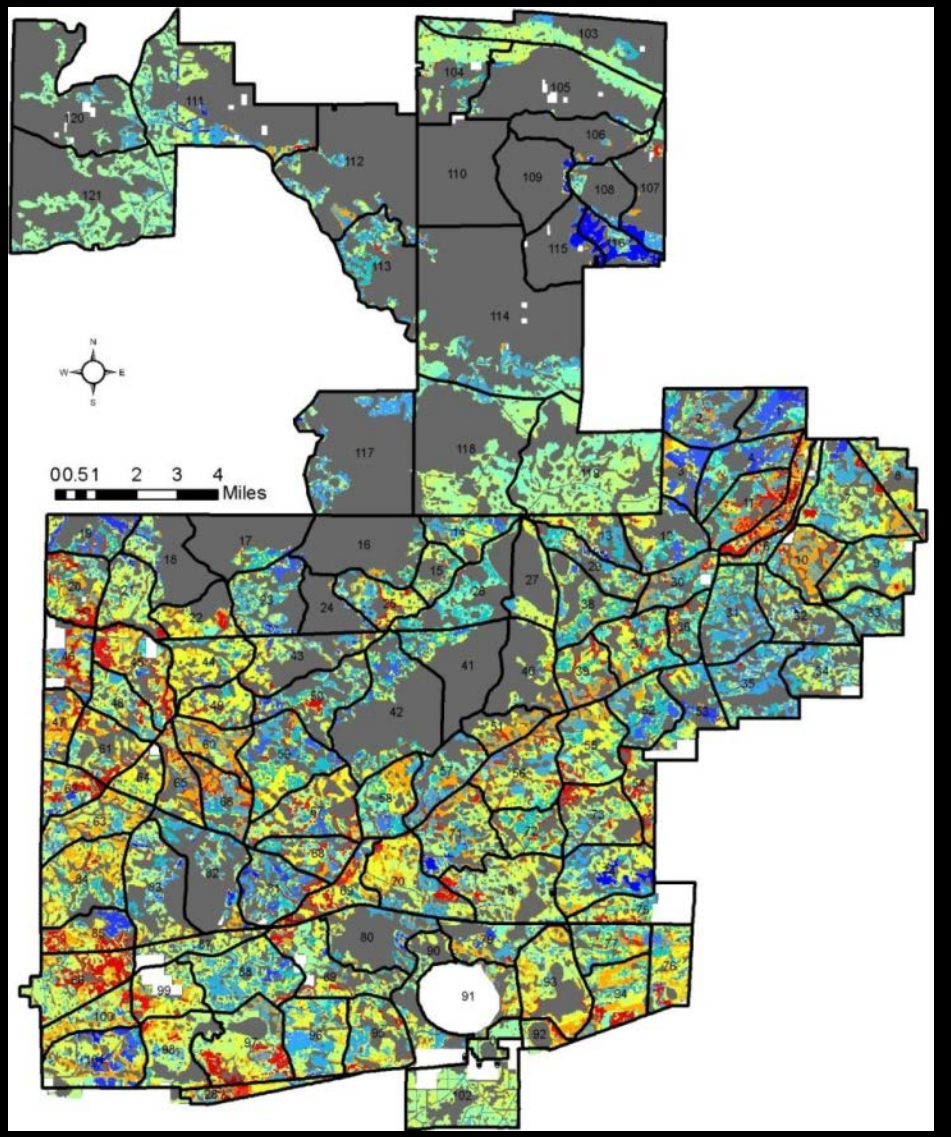


Prioritization Models:

Mechanical Fuels Treatment



Timber Thinning



Benefits

1. ECM process results in interdisciplinary synergy
2. Maximizes analytical powers of GIS for land management planning
3. Tracks changes in ecosystem condition
4. Provides an essential mid-level planning tool
5. Allows more open and transparent management decisions
6. Facilitates collaboration with public/private agencies and stakeholders
7. Facilitates development of DFCs and Objectives during Forest Plan revision
8. Demonstrates management progress (e.g., annual monitoring report)
9. Displays possible future landscape conditions resulting from different management scenarios

Implementation Activities

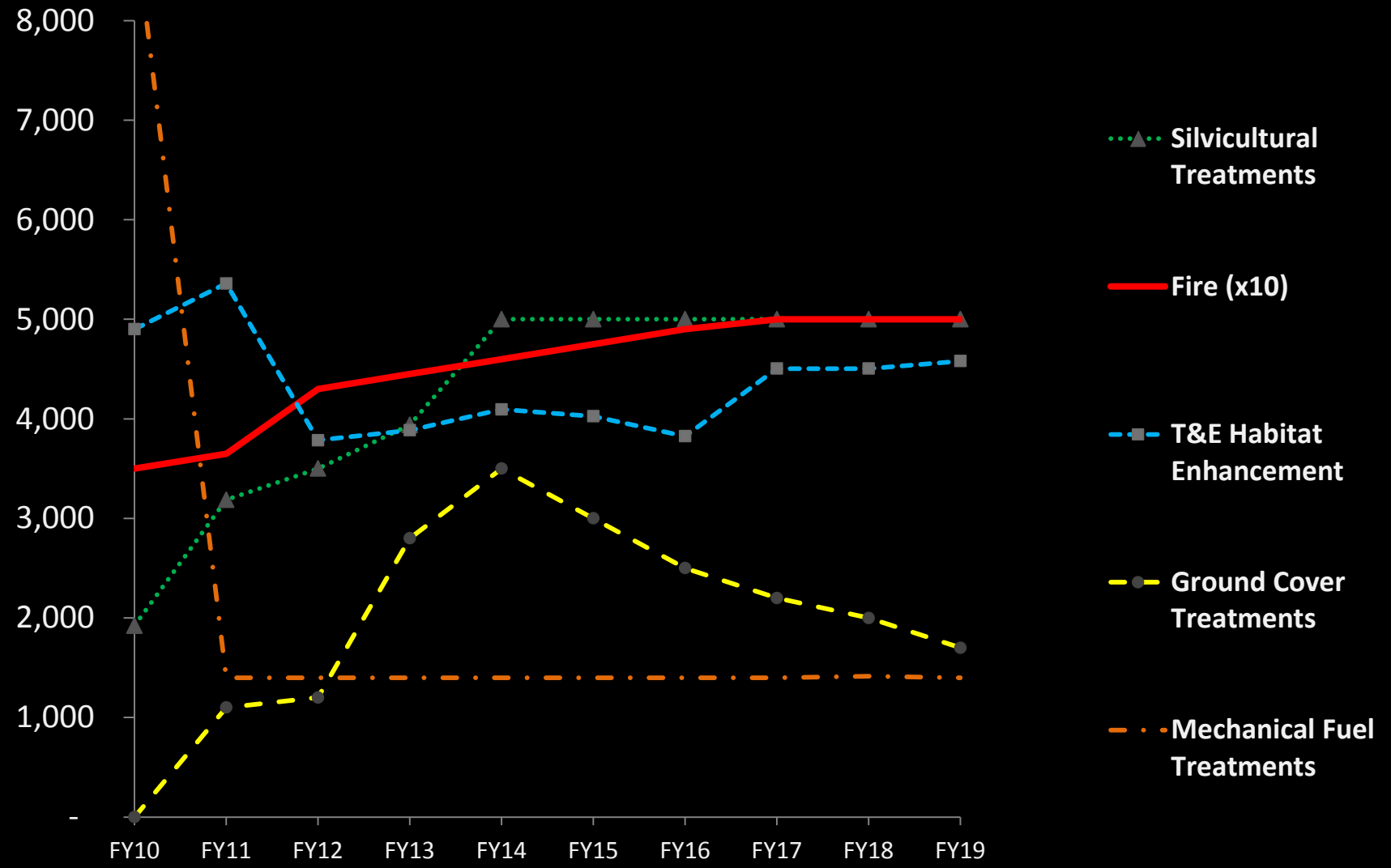
Implementation Activities

- Removal of off-site pine and restore to longleaf
- Understory restoration via palmetto reduction
- Release and weeding of young longleaf
- Fuel Reduction
  - Thinning
  - Mastication
  - Rx Fire

CFLRP Implementation

1. Double the annual prescribed fire acreage to 50,000 acres
2. Mechanically reduce fuel loads on 10,000 acres
3. Increase timber harvest from thinning less than 2,000 acres a year to 5,000 acres a year for the next 10 years
4. Restore ground cover by light roller chopping 21,000 acres followed by application of prescribed fire
5. Restore hydrology by correcting known problems on 309 miles of roads and 90 miles of old fire lines
6. Assistance for state and private land cooperators to conduct restoration treatments

How are we sequencing work?



Forecasted CFLRP Accomplishments in Acres FY10 – FY19

Thin, Chop, and Burn

Thinning and Regeneration

Palmetto Chopping

Palmetto Chopping

Palmetto Chopping
Pre- and Post-Treatment

Prescribed Fire

Mulching

Mulching
Pre- and Post-Treatment

Row Mowing
Pre- and Post-Treatment

Reforestation

Timber Stand Improvement Pre- and Post-Treatment

Wildlife Habitat Enhancement

Measuring
Success

CFLR Program Accomplishments on the Osceola National Forest (2010-2012)

- 100,964 acres of fuels reduction (29,183 WUI)
- 56,006 acres of wildlife habitat improvement
- 3,382 acres of groundcover restoration
- 6,741 acres converted from slash pine to longleaf
- 79,704 cubic feet of timber sold
- 8,852 acres of forest lands treated through timber sales

Acres Treated

Fiscal Year	Acres Treated
2010	67,527
2011	45,858
2012	62,354

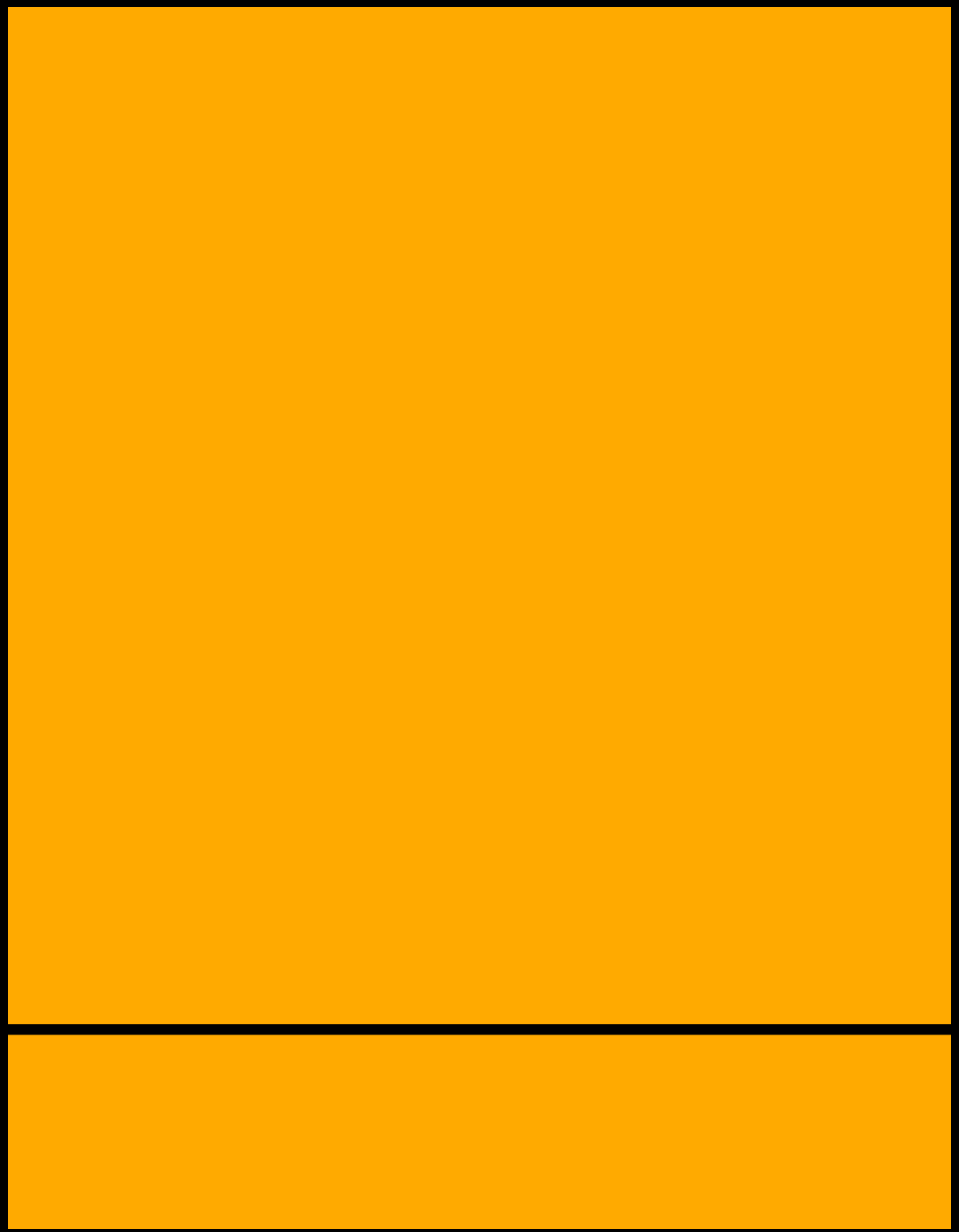
Total Acres Treated

Years	Acres Treated
2010-2012	175,739

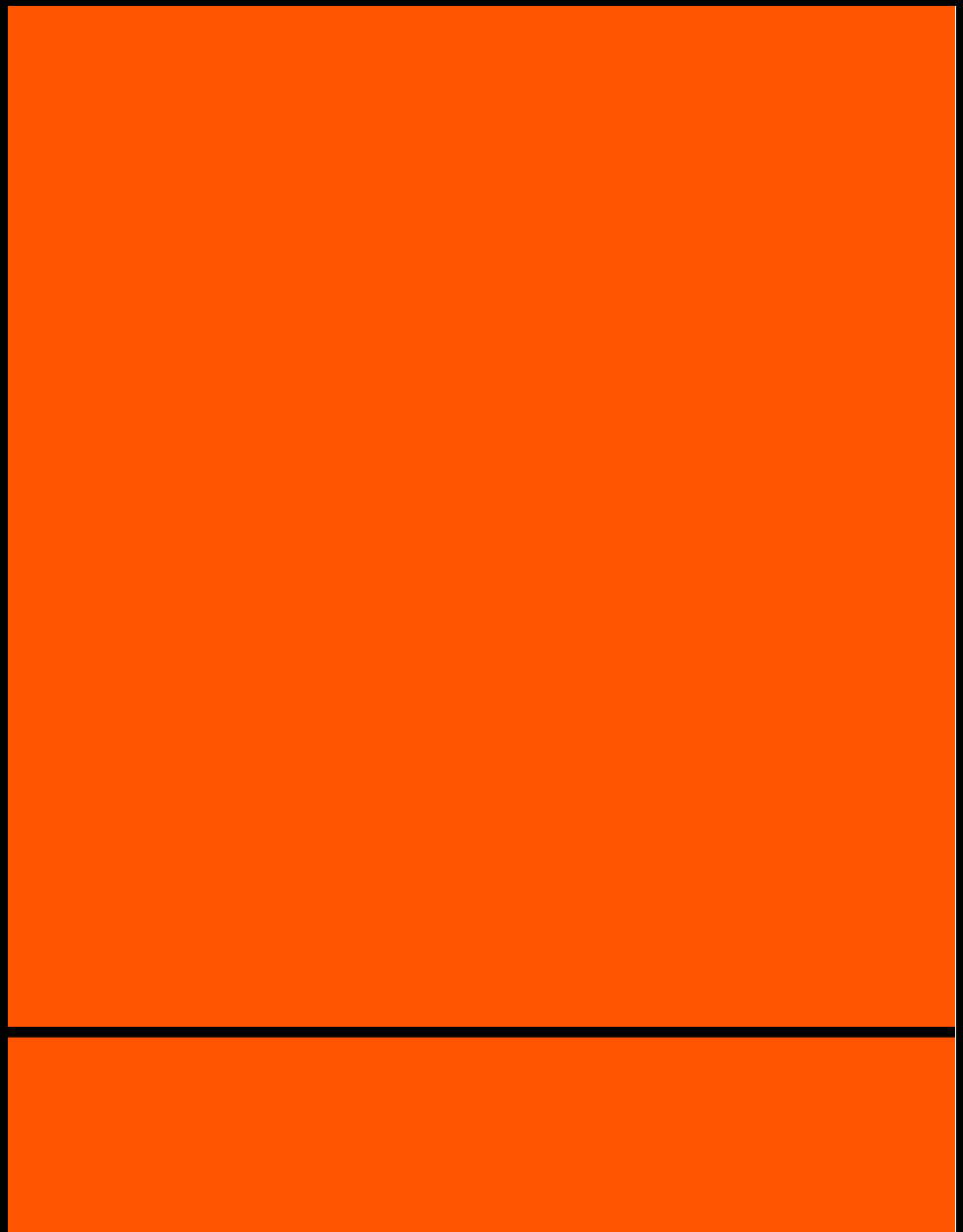
Footprint Acres Treated

Years 2010-2012	Acres Treated
2010-2012	157,462

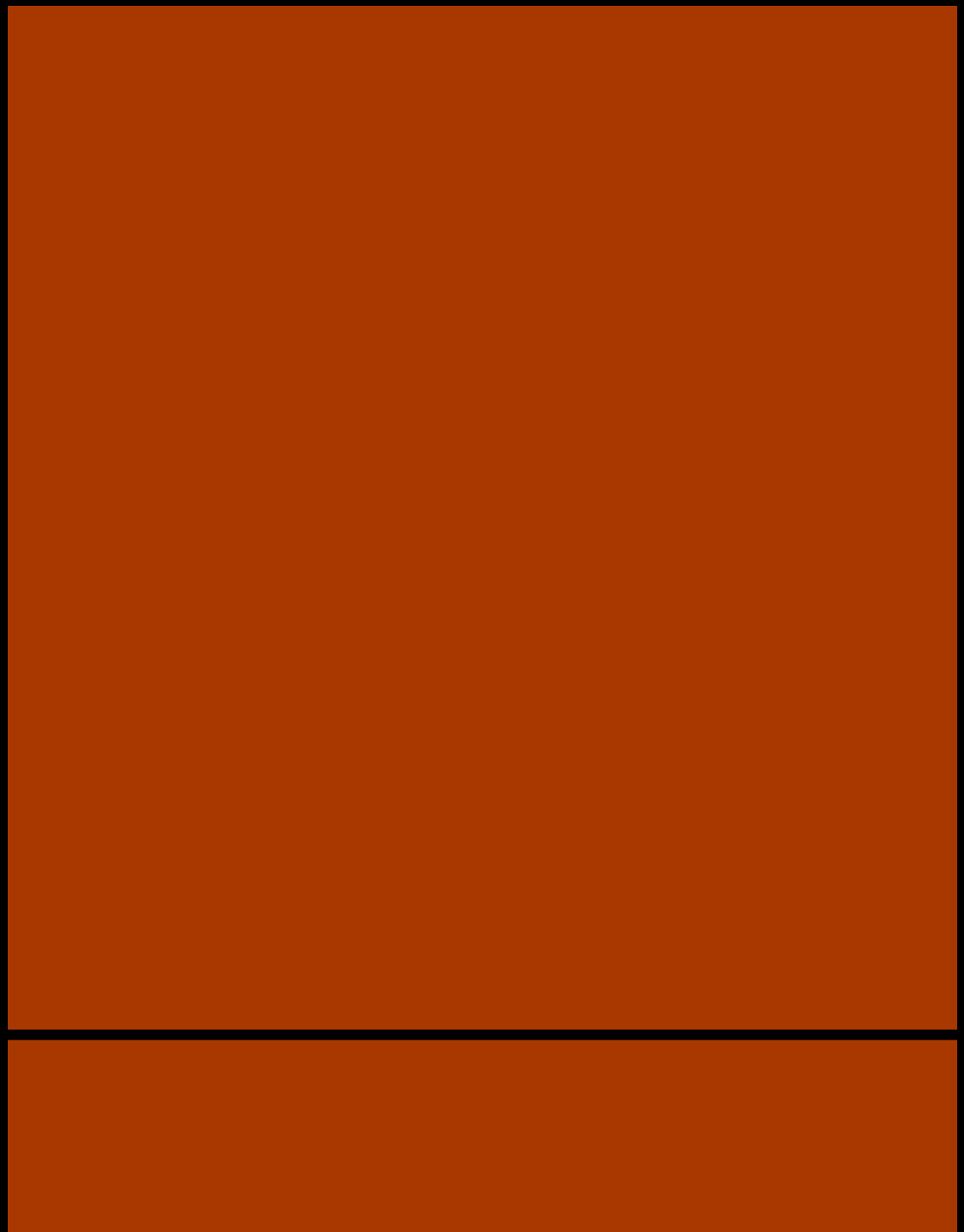
2010 CFLRP TREATMENTS



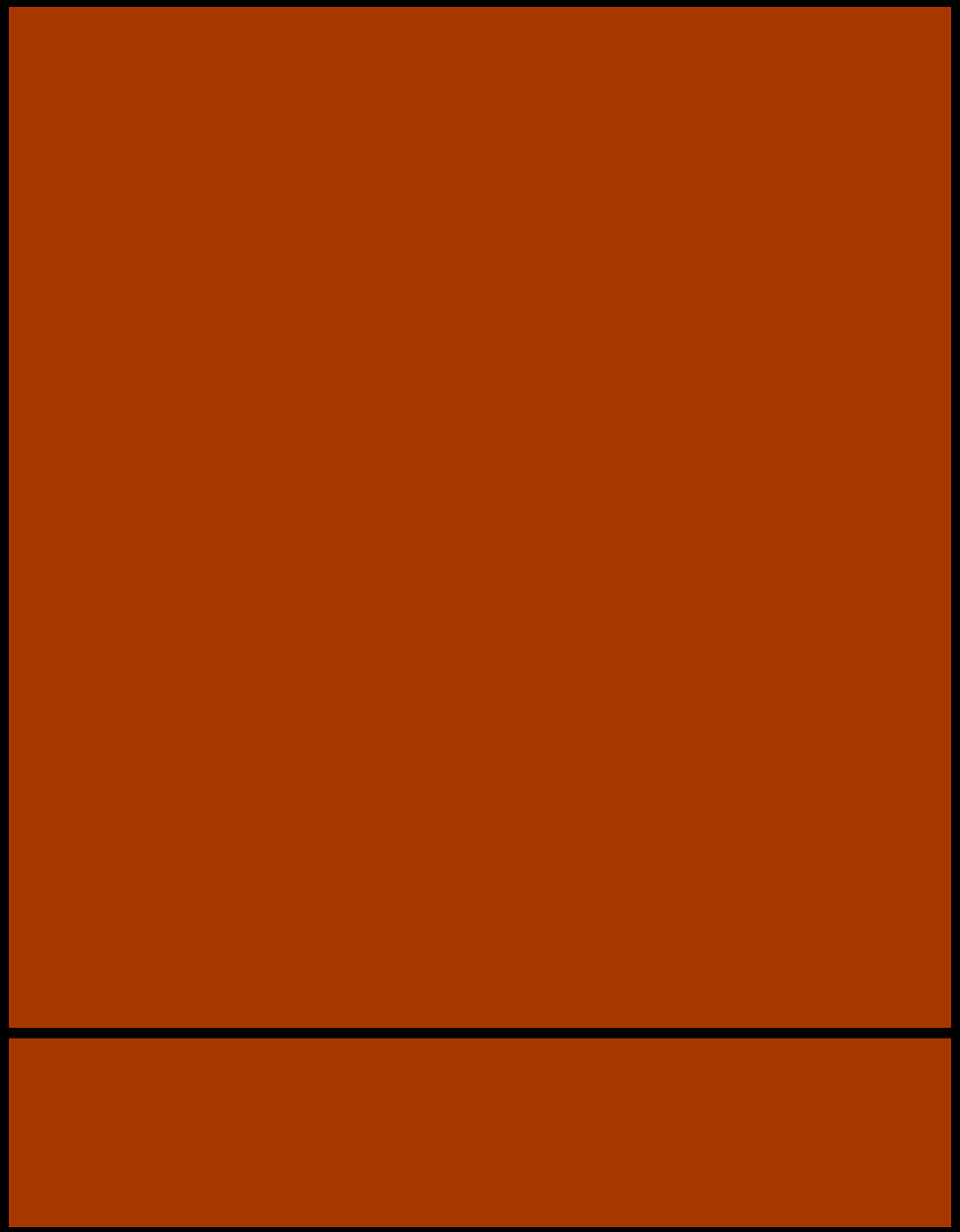
2011 CFLRP TREATMENTS



2012 CFLRP TREATMENTS



2010-2012 CFLRP TREATMENTS



Results

Results

Average Wildfire Size 2010-2011

Treated Areas	Untreated Areas
2 acres	526 acres

Results

Results

Results

Results

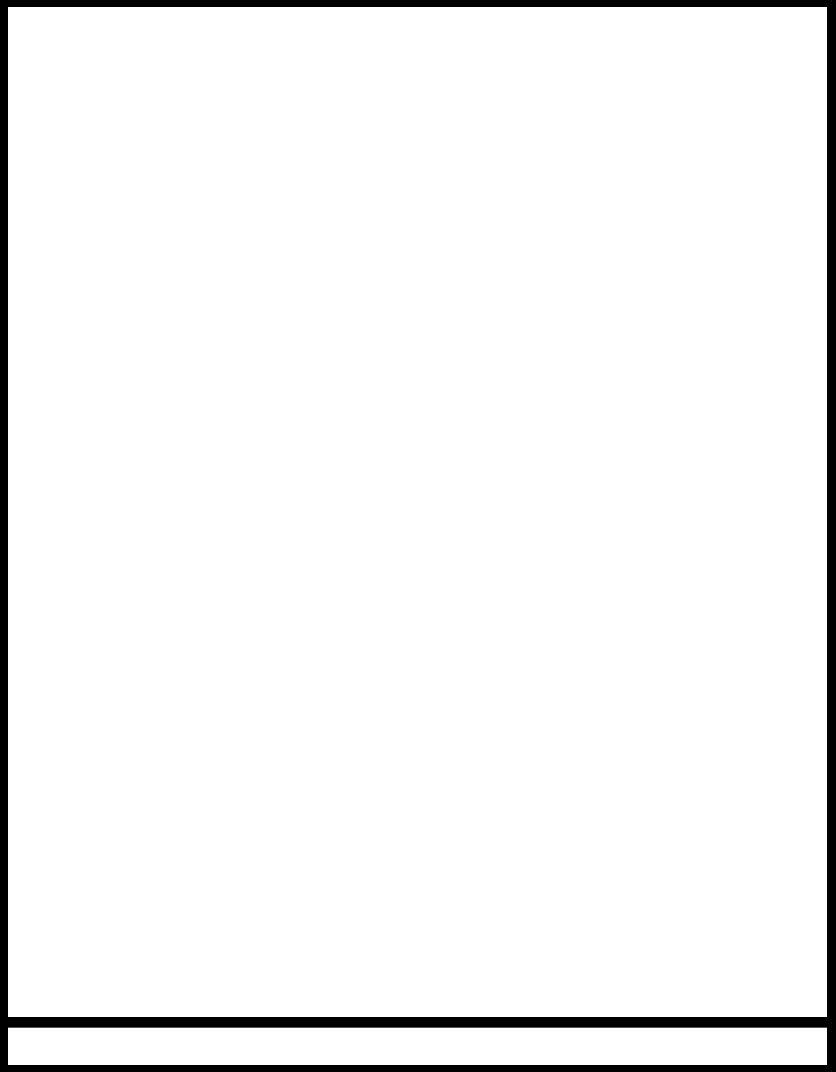
Collaboration

Collaborative Efforts

Collaborative Efforts Monitoring

Collaborative Monitoring-Tall Timbers

- 40 Plots
- 196-acres
- Randomly Selected



Collaborative Monitoring-Tall Timbers

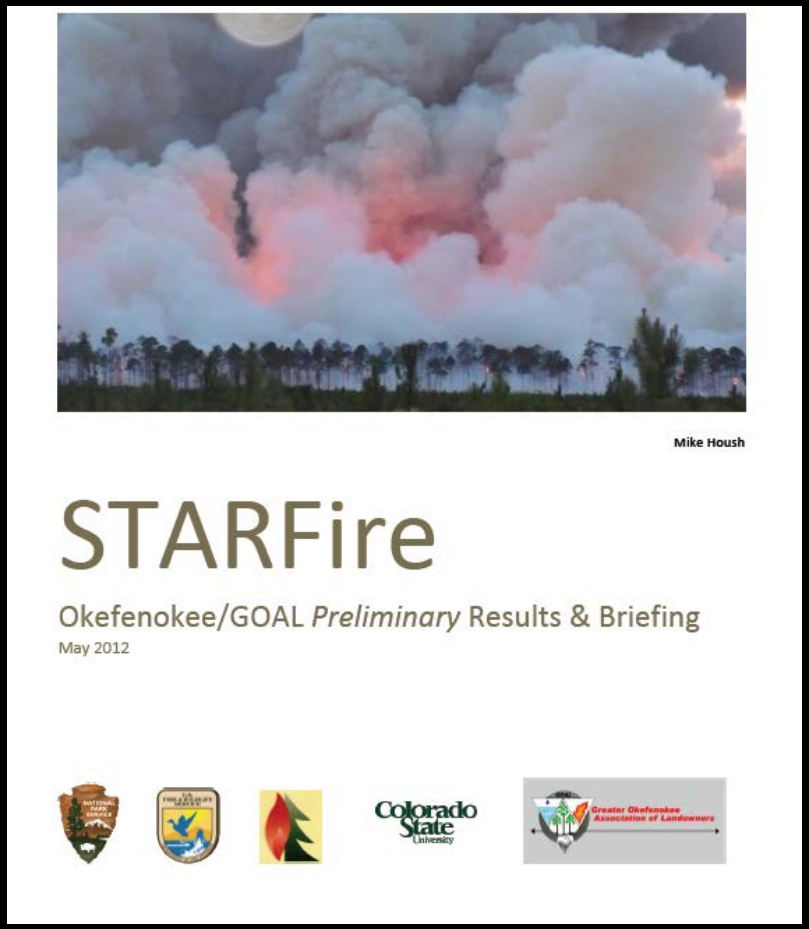
Collaborative Monitoring-Tall Timbers

Collaborative Monitoring-Tall Timbers

Collaborative Monitoring-Tall Timbers

Economic Impact Study
National Forest Foundation Grant Proposal

Collaboration
Fire Planning



TALL TIMBERS
Stewards of Wildlife & Wildlands

Colorado State University

Collaboration
Fire Planning

STARFire

Colorado State University

Providing Solutions For...

Fire Managers

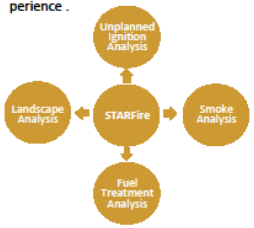
STARFire addresses critical elements of designing and implementing a fire program. It supports strategic and short-term fire management decisions and displays decision outcomes in a ways that are easily understood and communicated. STARFire can be tailored to produce spatial images of program outcomes that focus on specific questions (designing a fuels treatment plan) or on broader fire management issues (analyzing fire management plan alternatives).

Fire Planners

Fire planners can employ local goals and objectives through STARFire's valuation process to assess the effectiveness of current management strategies, or expand the scope to view and assess planning alternatives and gauge how each alternative progresses toward a desired fire management condition. Planning results may be interpreted visually and are quantified with critical metrics.

STARFire is an advanced and powerful spatial fire management planning and analysis system.

It sets a new standard in visual and analytic support for fire management planning, decisions and communication. STARFire has been carefully constructed to generate a full suite of baseline outputs from fire behavior data and valuation information founded on local knowledge and experience .



The robust architecture of STARFire supports fire planners and mangers across multiple tiers of the decision making and planning process. STARFire supports preseason planning, tactical (project level) implementation and strategic (program level) planning.

STARFire can assist Fire Managers and Planners by addressing a common set of questions:

- What are the expected benefits and risks of an unplanned fire on the landscape?
- What locations are good candidates for locating fuel treatments to meet hazard and ecosystem objectives?
- How do planned and unplanned ignitions affect the condition of the landscape, especially the departure from a desirable fire management condition?
- How can I quantify cumulative effects (across time and space) to fulfill environmental compliance requirements?
- Where is smoke likely to be an important consideration?
- If I have an ignition, which portions of the fire perimeter are likely to require protection and which are likely to produce ecosystem benefits? What are some likely risks and benefits of an on-going event as its perimeter expands?

http://warnercnr.colostate.edu/starfire-home/

STARFire

From a common set of inputs the full analysis suite can be generated ....

Web–based Access

STARFire is built on a service -oriented architecture that allows the results of the analysis to be published as map services. Each analysis is accompanied by a high quality intuitive display to help mangers and planners communicate planning and management strategies. These displays can be accessed through geospatial viewers such as ArcMap, the STARFire Viewer and Google Earth

STARFire Viewer

Google Earth

National Interagency Fire Center
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Boise, ID 83705-5354

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EMAIL: jeff_manley@nps.gov

WESTFIRE Research Center
Colorado State University
230 Forestry, Fort Collins,
Colorado 80523

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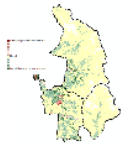
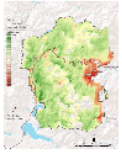
EMAIL: doug@cnr.colostate.edu

Landscape Analysis

The landscape analysis is used to compare planning alternatives. A quantitative picture (a snapshot) of the landscape relative to a desired fire management condition is taken for any planning or management scenario. By comparing snapshots from different alternatives, planners can document and display the relative advantages. Snapshots can be compared to assess the efficacy of alternative planning strategies. The landscape analysis can compare fuel treatments, suppression alternatives, or a combination of fire management strategies. It can also address how the desired fire management condition changes with time.



Unplanned Ignition Analysis

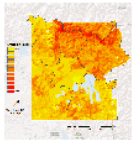


The unplanned ignition analysis shows where fire can benefit the ecosystem and where fire can be risky to property and other highly valued resources. The entire landscape is scanned to estimate potential benefits and risks from any ignition location. Each cell is assigned a color showing the benefits and risks of a simulated fire footprint. Risky ignition cells are shown in red and ignition cells that can benefit the ecosystem are shown in green. The darker colors indicate more intense impacts.

Fuel Treatment Analysis

The fuel treatment analysis scans the entire planning unit to suggest optimal locations for fuel treatments. STARFire considers the benefits of ecosystem improvement and hazard fuel reduction. Using alternative planning scenarios to increase the number of acres treated, a prioritized view of fuel treatment locations can be generated. The locations suggested by STARFire provide a landscape perspective that can compliment tactical implementation efforts.

Smoke Analysis

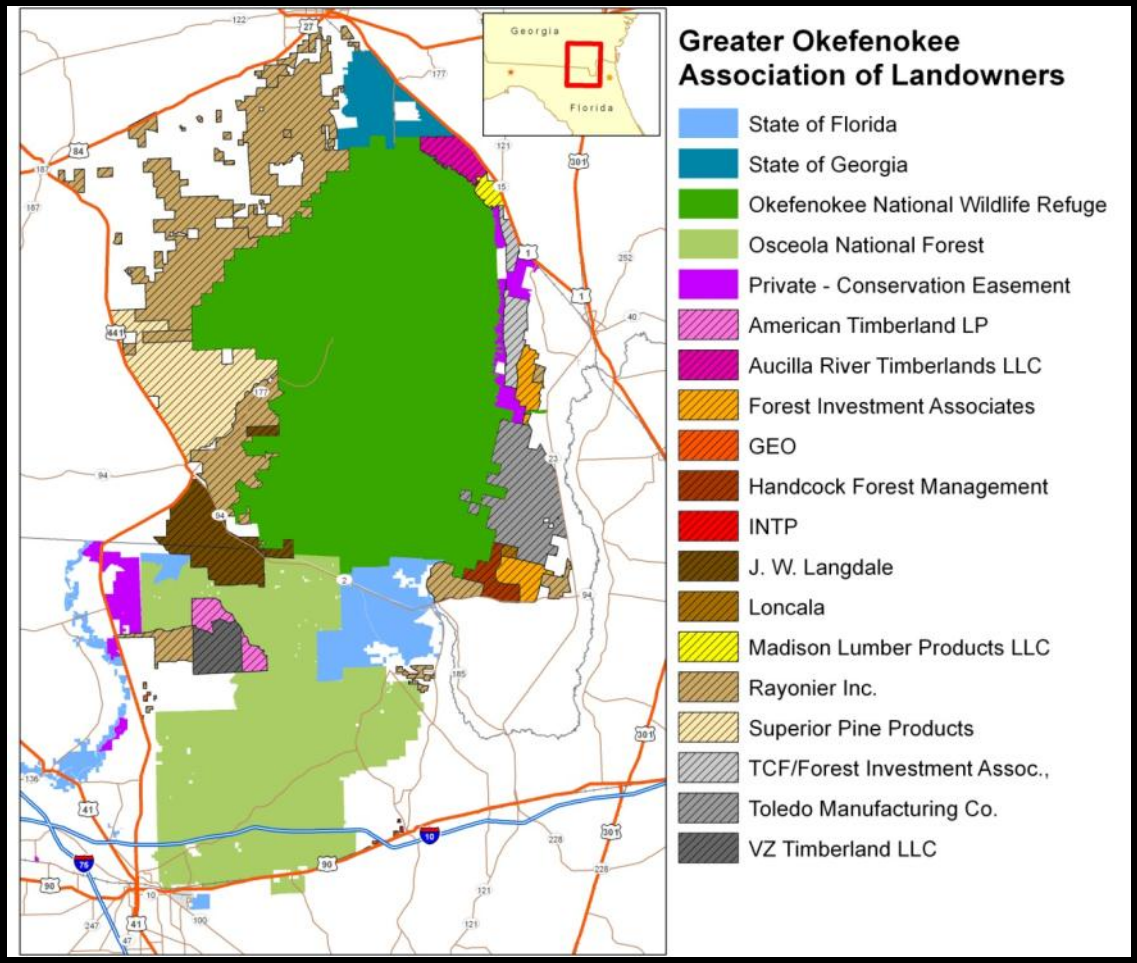


STARFire generates a smoke impact map that combines information on the potential of fuels to produce emissions and the estimated impact of emissions. The smoke analysis complements the unplanned ignition analysis by giving fire managers and planners quick access to potential smoke impacts for any unplanned ignition. The smoke analysis also provides a strategic level view of areas on the landscape that are likely to generate important emission concerns.

http://warnercnr.colostate.edu/starfire-home/

Collaboration

Okefenokee/Osceola LLP Implementation Team



Collaboration

Okefenokee/Osceola LLP Implementation Team

TALL TIMBERS
Stewards of Wildlife & Wildlands
LANGDALE INTERNATIONAL
SERPPAS
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
NATIONAL WILD TURKEY FEDERATION
AMERICA'S LONGLEAF
UNIVERSITY of FLORIDA
FLORIDA FOREST SERVICE
Agriculture & Consumer Services
WildLaw
A Nonprofit Environmental Law Firm
FLORIDA Natural Areas INVENTORY
U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR
GOAL
Greater Okefenokee Association of Landowners
FLORIDA FORESTRY ASSOCIATION
Colorado State University
Est. 1995
The Longleaf Alliance
NATIONAL PARK SERVICE
NRCS
NATIONAL FOREST FOUNDATION
Protecting America's Backyard
THE CONSERVATION FUND
America's Partner in Conservation
Arbor Day Foundation
The Nature Conservancy
Protecting nature. Preserving life.™
AMERICAN FORESTS
Protecting & Restoring Forests for Life

Questions