



## **BIOMASS & LONGLEAF: LONGLEAF RESTORATION SOURCING IN LUCEDALE REGION**

**Enviva, The Longleaf Alliance, Wildlife Mississippi, Mississippi  
Forestry Association**

# OVERVIEW



- Speaker Introductions
- Benefits of Longleaf Pine
  - Carol Denhof, President, The Longleaf Alliance
- Enviva's partnership with The Longleaf Alliance and Overview of Restoration-Oriented Sourcing
  - Ben Larson, Director of Sustainability, Enviva
- How longleaf restoration-oriented sourcing can help land managers and landowners restore their longleaf
  - Robert Smith, Coastal Program Coordinator, Wildlife MS



# Benefits of Restoring Longleaf Pine

*Carol Denhof, President, The Longleaf Alliance*



# Benefits: Habitat Adaptability





# Benefits: Wildlife Diversity

- Each new plant species provides for 10 new insect species.
- All these little things provide food for the bigger things.



# Benefits: Resiliency of the Tree



Insects



Fire



Wind



# Benefits: Superior Forest Products



Saw Timber



Poles



Pine Straw





# Benefits: Water Resource Benefits



Why is it important to have an abundance of properly managed forests in a watershed?



- Regulate water supply
- Improves wastewater capacities, businesses, wildlife, recreation, aesthetics
- Economic prosperity and cost savings

# Benefits: Longleaf and Water Yield



- Forests in the southeast face water availability challenges due to climate change, multi-year droughts, and water use and consumption.
- Close relationship between land cover and water yield in longleaf forest
- Compared to other southeastern forests types, longleaf pine has
  - the lowest annual evapotranspiration rates
  - lower per-tree water use
- **Low basal areas in restored longleaf pine forests**
  - Reduce evapotranspiration which increases stream runoff or groundwater recharge (or both).
  - Increases resilience to drought by reducing water stress on the trees that remain after stand reductions
- **Longleaf slows down metabolically, decreasing its water usage, when stressed.**
- **Longleaf groundcover, especially grasses use water efficiently decreasing demand on the system.**

# Enviva's partnership with The Longleaf Alliance and Overview of Restoration Sourcing

*Ben Larson, Director of Sustainability, Enviva Biomass*

## 5-yr MOU with annual funding for The Longleaf Alliance's assistance on our shared goals:

1. Provide strategic guidance, e.g.s., on our five-year longleaf restoration plan
2. Provide technical assistance on:
  - ✓ longleaf management guidelines and forest management plans
  - ✓ GIS mapping of longleaf stands
  - ✓ development of stand-level monitoring protocol
3. Training Enviva staff, primarily through Longleaf Academies
4. Connecting Enviva with landowners, primarily through workshops, materials, and LITs
5. Special LLP restoration projects such as LLP seedlings or RCW inserts
6. Jointly assessing and reporting our annual restoration sourcing (quality & quantity)



# ENVIVA LONGLEAF PROCEDURES

1. Enviva is adding longleaf as a new type of high conservation value forest (HCV) to our policy and procedures
  - A. All our sourcing on stands where longleaf is dominant or co-dominant canopy will need to maintain or improve them as longleaf stands
  - B. We will use best-available mapping in our states
    - FL longleaf ecosystem occurrence (LEO) mapping
    - And will ground-truth mapping in our monitoring (below)
  - C. Indicators of landowner intent to maintain longleaf
    - ✓ At a minimum, the harvest plan needs to specify maintain longleaf canopy
    - ✓ We encourage and support landowners to have a management plan written



# ENVIVA LONGLEAF PROCEDURES

2. Good longleaf management guidelines into management plans
  - ✓ Developed management guidelines with The Longleaf Alliance, Milliken Forestry, and others
  - ✓ Enviva will pay for Tree Farm or Forest Stewardship Council (FSC) certification
  - ✓ Milliken Forestry will write plans in some regions
  
3. Monitoring our longleaf restoration sourcing
  - ✓ To ensure that our sourcing is moving stands toward desired conditions, we will use the LEO rapid assessment tool
  - ✓ Conduct pre- and post-harvest assessments in all stands
  - ✓ The Longleaf Alliance has begun training our foresters in use of the LEO rapid assessment tool
  - ✓ We will also take photos at all the sampling sites



# Lucedale, MS Plant Summary

*Roy Holder, Enviva Biomass*

## Lucedale expected completion timeframe

- Construction is well underway--expected completion date is mid-year 2021

## Sourcing Summary

- Will be buying from public and private lands
- Sawmill Residuals: dry shavings, dust and bark (predominantly pine but will purchase some HW materials)
- Fuel Chips: both pine and HW. (~525K tons annually)
- Pine and HW round wood: both pine and HW round wood in the procurement area. (~650K combined pine/HW tons annually)

## Stumpage and Suppliers

- We will be buying some volume of supply as stumpage. We will be purchasing a portion of both round wood and fuel chips as stumpage to procure the mills fiber needs. (private landowners, timber land companies etc..)
- Most of the mills volume will be procured through local loggers/suppliers. Enviva looks forward in dealing with the many reputable local loggers/suppliers to purchase both pine and HW in the procurement area.



# Our restoration-oriented sourcing at Lucedale, MS

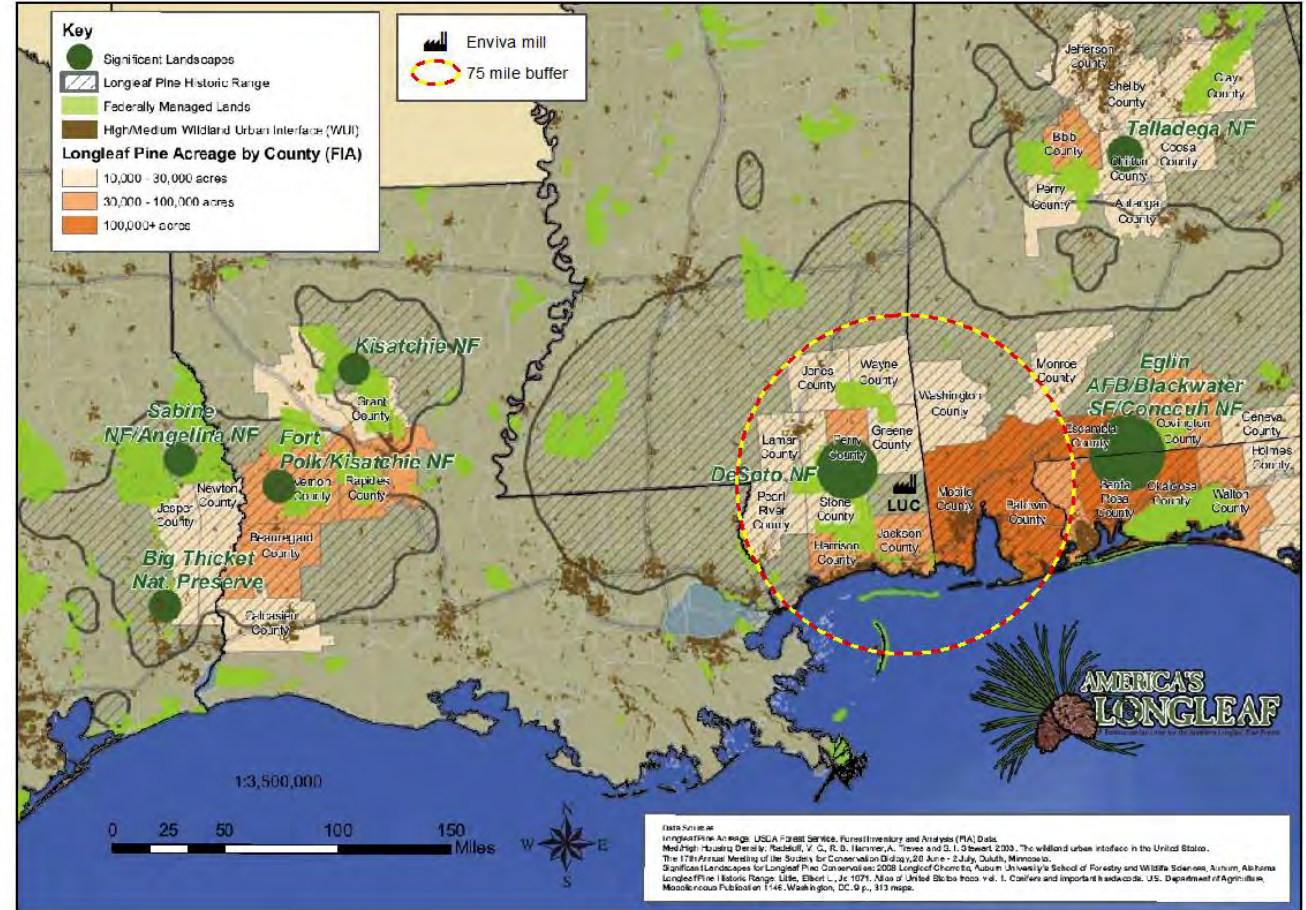
## Practical considerations

Not all restoration projects will be financially viable for a logger. These aren't absolute constraints, but a few rules of thumb include:

**Proximity:** 75 miles

**Size of tract:** 40 acres or larger. Or two smaller tracts need to be located within one-quarter mile, so a logger doesn't have load up equipment on trailers to move between tracts.

**Amount of biomass per acre:** 20-25 tons (or one load) per acre.



# OUR RESTORATION-ORIENTED SOURCING SCENARIOS

Forestry operation	Restoration goals	Examples
Hurricane recovery	Removing leaning or downed trees	<ul style="list-style-type: none"><li>• 700+ acre private tract in Bay County, FL</li><li>• Apalachee Wildlife Management Area</li></ul>





# OUR RESTORATION-ORIENTED SOURCING SCENARIOS

Forestry operation	Restoration goals	Examples
Final harvest (either roundwood or chipping) canopy and midstory	On longleaf soils/sites, removing small-diameter sand pine or loblolly pine or scrub hardwood to restore longleaf	<ul style="list-style-type: none"><li>• 40-acre private parcel in Houston CO, AL where the landowners are going to establish longleaf as part of NRCS' gopher tortoise program</li><li>• Torreya and Falling Waters State Parks</li></ul>



# OUR RESTORATION-ORIENTED SOURCING SCENARIOS

Forestry operation	Restoration goals	Examples
Thinning canopy	Get light on understory	1,000+ acres at Eglin Air Force Base (FL)
Microchipping hardwood midcanopy	Restoring habitat, including gopher tortoise	800+ acres at Geneva State Forest Wildlife Management Area (AL)



# Benefits of Restoration Sourcing for Landowners and Land Managers

*Robert Smith, Coastal Program Coordinator, Wildlife Mississippi*

Timber harvest is a TOOL to help you reach YOUR objective



**AESTHETICS**



**TIMBER**



**WILDLIFE**



**RECREATION**



## Restoration Through Enviva Sourcing Results in:

- Utilization of forest products that were previously nonmerchantable
- Income for the landowner where before there was only expense
- Habitat for rare, threatened, endangered, and game species
- Ability to achieve restoration objectives



# Fuel Reduction



# Precommercial Thinning



# Hurricane/Tornado Salvage and Recovery



# Wildlife Habitat Improvement





# Wildlife Habitat Improvement



# Conversion Back to Longleaf

