

MANAGEMENT GUIDELINES

for Establishing Eucalyptus Plantations in Western Gulf States

Paper mills that require hardwoods as raw material often have difficulty acquiring sufficient supplies of local trees when conditions are wet. Many of the hardwood species mills rely on grow in bottomland areas that cannot be harvested during wet periods to protect soil and water quality.

When mills cannot obtain enough local trees, they must bring in round wood or chips by rail or barge at high costs. To overcome these hardwood supply problems, forest managers need new options for quickly growing plantations of hardwoods, preferably on upland soils that provide a wider harvesting window.

Eucalyptus plantations have the potential to boost the hardwood production potential in portions of the southeastern United States. With proper management, eucalyptus grows rapidly, is resistant to diseases and insects and has wood properties highly desired for multiple uses.

Eucalyptus has excellent fiber properties for paper, engineered and reconstituted wood products, and bio-based products. Eucalyptus plantations can reach harvestable size (up to 70 feet in height and 7 inches in DBH) for pulpwood or other small-diameter timber products in as little as six to eight years. With proper management, eucalyptus has the ability to produce 18 to 20 green tons per acre per year. This growth rate compares favorably to the commonly planted loblolly pine, which produces up to approximately 10 green tons per acre per year under highly intensive management. Eucalyptus plantations can achieve these high growth rates on upland soils, which may provide the forest products industry with a greater supply of hardwood trees grown relatively close to production facilities.

Achieving these high growth rates is only attainable through planting the best available genetic material and intensive suppression of

weeds in the year prior to planting and the year after planting. Eucalyptus species are highly sensitive to competition for site resources. Weeds severely stunt the growth of eucalyptus, and eucalyptus growth typically does not recover even after weed control is conducted if weeds are allowed to develop. As such, eucalyptus plantation management requires more frequent herbicide applications than southern pine plantations more typically managed for forest products in the Western Gulf region.

Eucalyptus trees managed for fast growth also require timely fertilization. By maximizing weed control and providing ample nutrition during the year prior to and the year after planting, trees grow tall enough in the first year (6 to 12 feet) so that no further weed control is needed for the remainder of the seven- to eight-year rotation.

Eucalyptus historically has been limited in the United States by its sensitivity to freezing temperatures. Tree breeding research recently has identified cold-resistant eucalyptus trees that are tolerant of temperatures down to 17 degrees Fahrenheit. This cold tolerance makes eucalyptus plantation management viable in southern portions of most states in the southeastern United States.

As a result of the identification of cold-tolerant eucalyptus, the forest products industry is beginning to plant some eucalyptus plantations in the southeastern United States. Operational eucalyptus plantations have been cultivated in southern Louisiana and southeast Texas during the past eight years, and through research and trial and error, viable silvicultural practices have been developed to successfully establish such plantations. This publication provides an overview of the silviculture used to establish these plantations in Louisiana and Texas.

Table 1. Silvicultural activities necessary for each month of the first three years while establishing *Eucalyptus benthamii* plantations in interior regions of Western Gulf states.

Management Activity	Year 1												Year 2												Year 3		
	J F M A M J J A S O N D												J F M A M J J A S O N D												J F M		
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
Soil testing																											
Broadcast site preparation herbicide																											
Mechanical site preparation																											
Banded site preparation herbicide																											
Tree planting																											
Banded P fertilization																											
Interbed pre-emergence herbicide																											
Banded pre-emergence herbicide																											
Banded or hand NP fertilization																											
Banded or DS post-emergence herbicide																											
Early summer DS post-emergence herbicide																											
Late summer DS post-emergence herbicide																											
Banded or hand NPK fertilization																											
Broadcast pre-emergence herbicide																											
Banded or hand NPK fertilization																											

NOTE: DS = directed spray, N = nitrogen, P = phosphorus, K=potassium. For each management activity, solid grey shading indicates the activity should be conducted once within the months shaded. Striped grey shading indicates the activity may be necessary once within the shaded months under some circumstances (high competing vegetation or symptoms of nutrient deficiency).

Species

There are more than 700 species within the *Eucalyptus* genus, and several of these species can tolerate freezing naturally. There is ongoing research to identify families within species that have exceptional cold tolerance and to enhance cold tolerance through selective breeding within and between species.

So far, the species that has exhibited the best balance of cold tolerance and fast growth is *Eucalyptus benthamii*. This species is originally from limited areas west of Sydney, Australia, and it has proven suitable for regions with cold climates and frequent frosts in several countries. *Eucalyptus benthamii* currently is the most common eucalyptus species planted in Louisiana

and Texas, and the silvicultural practices described in this publication have been used operationally in plantations of this species.

Region

Although *Eucalyptus benthamii* has cold tolerance, if it is planted too far north, it can be killed by temperatures below its tolerance threshold. The northern limits of the regions of Louisiana and Texas within which *Eucalyptus benthamii* can be planted to minimize cold damage risk are near the cities of Jasper, Texas, and DeRidder, La.

The southern limit is relatively close to the coast of the Gulf of Mexico, and proximity to the coast affects silvicultural considerations of

Table 2. Chemical common names, sample trade names, major vegetation types controlled and ranges within labeled rates for herbicides used in eucalyptus plantation management.

Note: The rate of each herbicide used must take into account site conditions (soil texture, soil moisture, pH, thickness of soil organic matter, vegetation species and density) and status of the eucalyptus trees (time since planting, vigor, etc.). Herbicide labels must be consulted for guidance in determining the proper rate to use to avoid damage or mortality of eucalyptus seedlings.

Common Name	Trade Names	Vegetation Types Controlled	Rate Range
Glyphosate	Accord	All vegetation types	Site preparation: 1 to 8 quarts per acre Directed spray: 0.75 to 5 percent herbicide per unit of water
	Honcho		
	RazorPro		
	Roundup		
	Many others		
Triclopyr	Garlon4	Broadleaf weeds, woody brush	1 to 6 quarts per acre
	Triclopyr4		
Sulfometuron Methyl	Oust	Broadleaf weeds, grasses	0.5 ounces per acre or less
	SFM75		
Clopyralid	Clopyralid3	Broadleaf weeds, woody brush	0.33 to 0.67 pints per acre
	Transline		
Fluazifop	Fusilade	Grasses	16 to 24 ounces per acre

soil water drainage. Within this coastal region, which extends south from Lake Charles, La., most eucalyptus plantations typically are planted on retired agricultural lands because of the abundance of this land-use type and its suitability for conversion to eucalyptus plantations. Farther from the coast, most eucalyptus plantations are planted in former slash pine (*Pinus elliottii*) and loblolly pine (*Pinus taeda*) plantations due to their abundance within the region.

These differences in former land uses affect silvicultural considerations of herbicides and influence how much mechanization of herbicide and fertilizer application is possible. Due to these differences in management considerations for eucalyptus plantations established in coastal or more interior regions, different silvicultural guidelines are presented in this publication for each region.

Interior Region Silviculture for Plantation Establishment

An overview of management activities for the interior region and the months in which they should be conducted is provided in Table 1. Additional information on herbicides used in plantation management is included in Table 2.

Year 1

April-July: Soil Testing

A vital first step in eucalyptus plantation establishment is assessing the soil conditions of the site. Particular attention should be paid to whether there are physical soil properties that could impede root development and create a need to subsoil for successful stand establishment.

Databases such as the USDA Natural Resource Conservation Service Web Soil Survey can be used to find information on the geology, texture, drainage, bulk density and suitability for mechanical site preparation. Direct measurement of soil properties that can restrict root development can be done by auguring to determine the depth to a hardpan. If a hardpan (dense soil layer) is present within 24 inches of the soil surface, subsoiling is required. A soil penetrometer also can be used to directly measure whether surface soil density could restrict root growth. If soil density exceeding 145 pounds

per square inch is measured within 24 inches of the soil surface, subsoiling will be required prior to seedling planting. Soil samples also can be collected by soil auger or shovel and sent to a laboratory to determine soil nutritional content and pH.

July-September: Broadcast Site Preparation

The objective of herbicide application prior to planting (chemical site preparation) is suppression of hardwood trees – but without using herbicides that have residual activity that could damage or kill eucalyptus seedlings once they are planted in the fall. Mixtures of triclopyr, glyphosate and sulfometuron methyl are the most commonly used herbicides. They are broadcast-applied by aerial or ground equipment.

Exact mixtures, rates and timing are dependent on site conditions, particularly the hardwood species and density and vigor of species to control. It is important to avoid soil-active herbicides such as imazapyr, hexazinone and picloram, which have residual soil activity that could be detrimental to fall-planted *Eucalyptus benthamii* seedlings. Applying herbicides as far in advance of mechanical site preparation as possible can improve suppression of hardwood species, as well.

August-September: Mechanical Site Preparation

Mechanical site preparation consists of using a bedding plow to create beds on which the seedlings are planted. On sites with verified root-restrictive soil texture, subsoiling also must be done. Either a subsoiling plow used prior to bedding or a combination bedding and subsoiling plow can be used to subsoil the site.

On former pine plantation sites, minor shearing, raking and piling of standing trees and logging debris may be required prior to bedding and subsoiling. Prescribed burning may be necessary prior to bedding and subsoiling for sites with relatively high logging debris.

Optimum bed characteristics include a V- or flat-shaped top to promote capturing moisture around seedlings. Bed heights should range between 10 inches and 15 inches above the original ground surface. In sites with poor drainage, taller beds are necessary (Figure 1). Bed

width should be kept relatively narrow (less than 3 feet wide) in sloped areas to minimize risk of soil erosion.



Figure 1. Bedded and subsoiled field prepared for eucalyptus plantation establishment in southwestern Louisiana. Photo by Michael Blazier.

September-October: Band-applied Site Preparation Herbicide

Sulfometuron methyl herbicide should be band applied at rates less than 0.5 ounces per acre on the tops of beds at least two weeks prior to planting for pre-emergence weed control. If weeds are growing on beds at the time of application, glyphosate can be added as a tank mix to improve vegetation control.

If sulfometuron methyl cannot be applied prior to planting of seedlings, the herbicide can be applied as a directed spray on the sides of the beds. Care must be taken to avoid spraying within 20 inches of each eucalyptus seedling. Sulfometuron methyl can damage newly planted seedlings.

Mid-October-Mid-November: Tree Planting

Container seedlings of *Eucalyptus benthamii* seedlings are planted by hand in the fall so seedlings can harden off prior to the first freeze events of the year. If conditions are droughty at the desired Oct. 15 planting date, planting should be postponed until soil moisture improves. For sites that are navigable by equipment and where contractors with appropriate equipment are available, planting shutdowns may be avoided by using tractor-drawn watering equipment to water

seedlings immediately after planting.

Planting should be completed at least two weeks prior to the first forecast frost. First frost dates based on long-term averages are available in farmer's almanacs. The average first frost for the current northernmost limit for viable eucalyptus plantations in Louisiana and Texas is Nov. 16. Weather forecasts also must be consulted to ensure planting doesn't occur prior to impending frost.

Care must be taken to minimize field storage time to protect seedling viability. Refrigerated vans or trailers can be used for seedling storage during planting to avoid field storage. If refrigerated vans or trailers are not used, seedling orders must be coordinated closely with local nurseries to minimize the time between lifting in the nursery and planting in the field.



Figure 2. Fertilizer dispenser mounted to a subsoil plow used to prepare a field in southeastern Texas for eucalyptus planting. Photo by Michael Blazier.

September-February: Banded Phosphorus Fertilization

Eucalyptus benthamii has a relatively high phosphorus demand, so phosphorus is applied in fertilizer multiple times in the first year after planting. The first phosphorus fertilization is done with triple superphosphate that is hand-applied to each seedling at 70 grams per tree when site conditions prevent application of fertilizer by equipment.

Alternatively, contractors (where available) with appropriate equipment can band-apply triple

superphosphate at 100 pounds per acre at the time of bedding with fertilizer dispensers mounted on the bedding or bedding/subsoiling plows (Figure 2). Although subsoiling is done earlier than the recommended time for hand application of fertilizer, phosphorus fertilizer remains available in the soil for a duration long enough to promote better growth of the seedlings once planted.

November-January: Interbed Pre-emergence Herbicide

If a pre-planting banded application of sulfometuron methyl herbicide could not be completed or if the pre-planting banding application of sulfometuron methyl did not lead to relatively weed-free beds in the initial months after planting, directed spraying of sulfometuron methyl to the sides of beds and interbed areas should be conducted. Care must be taken to avoid drift of the herbicide over leaves of newly planted seedlings and to avoid spraying the herbicide within 20 inches of the base of each seedling. Rates of sulfometuron methyl should not exceed 0.5 ounces per acre.

Year 2

February-March: Banded Pre-emergence Herbicide

Oxyfluorfen herbicide is band applied on top of beds over the top of the seedlings to provide pre-emergence suppression of a broad spectrum of vegetation and some post-emergence suppression of weeds less than 3 inches tall. Oxyfluorfen should be applied when surface soil is moist. Application should be postponed if soil is dry to reduce risk of seedling injury and reduction of herbicide efficacy.

February-March: Banded or Hand-applied Nitrogen and Phosphorus Fertilization

In early spring, fertilization with diammonium phosphate (18-46-0) is conducted. It may be necessary to blend micronutrient and potassium fertilizers on some sites. Nutrient requirements can be determined by soil or foliage tests. A granular micronutrient fertilizer (such as CNI Crop and Turf Mix) that provides a relatively balanced mixture of sulfur (5 percent), boron (2.4 percent), copper (2.4 percent), iron (14.4 percent), manganese (6 percent), molybdenum (0.0005

percent) and zinc (5.6 percent) is a viable option for eucalyptus plantations. Potassium chloride fertilizer can be used to supply potassium.

Fertilization rates generally are 100 pounds per acre (for sites that can be accessed with tractor-mounted or drawn equipment for band application) and 70 grams per tree (for sites that can only be fertilized by hand).

April-May: Banded or Directed Spray Post-emergence Herbicide

The herbicides used in the first post-emergence herbicide application depend on the level of vegetation control provided by the pre-emergence herbicide applications and when the site can be accessed. If emerging weeds are less than 2 inches tall by midspring and are predominantly herbaceous vegetation, oxyfluorfen can be band applied alone or in a tank mix with clopyralid and/or fluazifop herbicides. If competing vegetation on beds is more than 2 inches tall by midspring or is made up of predominantly woody vegetation, directed spray with glyphosate is necessary. If competing vegetation has developed in the interbed areas by midspring, directed spray with glyphosate between the beds also will be necessary.

Extreme care must be taken with all directed sprays of glyphosate to keep spray and drift at least 20 inches away from each seedling. Even a



Figure 3. *Eucalyptus benthamii* plantation at the beginning of the second growing season after planting and after the final application of herbicide. Photos by Michael Blazier.

small amount of exposure to glyphosate is lethal to eucalyptus seedlings. Spraying must

Table 3. Silvicultural activities for each month of the first three years while establishing *Eucalyptus benthamii* plantations in coastal regions of Western Gulf states.

Management Activity	Year 1												Year 2												Year 3		
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
Soil testing																											
Broadcast site preparation herbicide																											
Mechanical site preparation																											
Banded phosphorus fertilization																											
Field drain system installation																											
Banded site preparation herbicide																											
Tree planting																											
Early winter banded pre-emergence herbicide																											
Early spring banded post-emergence herbicide																											
Banded NP fertilization																											
Spring banded or DS post-emergence herbicide																											
Midsummer DS post-emergence herbicide																											
Late summer DS post-emergence herbicide																											
Banded NPK fertilization																											
Interbed DS post-emergence herbicide																											

NOTE: DS = directed spray, N = nitrogen, P = phosphorus, K=potassium. For each management activity, solid grey shading indicates the activity should be conducted once within the months shaded. Striped grey shading indicates the activity may be necessary once within the shaded months under some circumstances (high soil moisture or high competing vegetation).

be conducted under low wind conditions. Spray wands or booms must be kept low to the ground to minimize drift. Drift also can be minimized by shielding around wands or booms and by using nozzles that use a relatively large droplet size.

June: Early Summer Directed Spray Post-emergence Herbicide

By early summer, vegetation will likely be growing too quickly for effective control with herbicides other than a directed spray of glyphosate. If vegetation is less than 4 inches tall, a broadcast or band application of a mixture of clopyralid and fluazifop herbicides can be used for weed control. If vegetation is taller than 4 inches, directed spray of glyphosate conducted with the cautions previously described is the only viable option for weed control.

In extreme circumstances, such as sites with competing vegetation equivalent in height to the eucalyptus trees (a condition that can develop if one or more of the previously described vegetation control measures are not conducted), manual brush sawing or rotary mowing between rows of eucalyptus trees may be necessary at this time of year to regain control of the competing vegetation.

July-September: Late Summer Directed Spray Post-emergence Herbicide

By late summer, directed spray of glyphosate typically is the only viable option for weed control. As mentioned above, situations with competing vegetation nearly equivalent in height to eucalyptus trees necessitate manual brush sawing or rotary mowing between rows of eucalyptus trees.

August-September: Banded or Hand NPK Fertilization

By August-September of the first growing season after planting the trees, the site should have little competing vegetation, which allows for fertilization of the site to maintain fast tree growth.

Fertilizer rates and blends can vary based on soil and foliage analysis, but generally a fertilizer mixture that provides 30 percent nitrogen, 20 percent phosphorus as P₂O₅ and 10 percent potassium as K₂O, as well as a mixture of

micronutrients, fosters *Eucalyptus benthamii* growth. This mixture is band applied at 100 pounds per acre for sites that can be accessed with equipment between rows and 70 grams per tree by hand for sites that are inaccessible by equipment.

Year 3

January-March: Broadcast Pre-emergence Herbicide

The final herbicide application is carried out at the beginning of the second growing season after planting to provide pre-emergence weed control (Figure 3).

A broadcast spray of sulfometuron methyl at a rate of 0.5 ounces per acre is applied by backpack sprayer. Care must be taken when applying the sulfometuron methyl to avoid applying the herbicide over the tops of trees or onto foliage of lower branches. For sites with relatively abundant vegetation between rows, a directed spray of glyphosate can be used in early spring to provide a final suppression of the vegetation for the remainder of the rotation.

February-March: NPK Fertilization

On sites with sandy surface soil that is low in nutrients (as verified in Year 1 soil sampling), it may be necessary to repeat the NPK fertilization completed in August-September of Year 2 to sustain fast growth rates.

Coastal Region Silviculture for Plantation Establishment

An overview of management activities for the coastal region and the months in which they should be conducted is provided in Table 3. Additional information on herbicides is provided in Table 2.

Year 1

April-July: Soil Testing

Soil testing is conducted for the coastal region as described previously for the interior region during Year 1.

July-September: Broadcast Site Preparation Herbicide

Coastal sites typically are retired pastures or agricultural fields, with a mixture of grasses and herbaceous weeds to control prior to planting. Initial control of this vegetation can be achieved by broadcast application of glyphosate. As with the interior region, herbicides such as imazapyr, hexazinone, and picloram should be avoided because their soil activity can damage or kill eucalyptus seedlings once planted.

Broadcast site preparation should be conducted at least two weeks prior to mechanical site preparation.

July-September: Mechanical Site Preparation

Bedding is performed to create V- or flat-shaped tops similar to those needed for interior sites, but bed heights are greater (20 to 24 inches high) for coastal zone sites. The need for subsoiling can be verified using practices described previously for interior zone soil testing. Coastal sites often require subsoiling, and effectiveness of fracturing hardpans and dense soil horizons is optimized by subsoiling when soil conditions are relatively dry.

July-September: Banded Phosphorus Fertilization

Phosphorus is added to soil with TSP fertilizer at 100 pounds per acre. The most cost-effective method for this pre-planting fertilization is with fertilizer dispensers mounted to bedding or bedding/subsoiling plows.

If contractors that can mount fertilizer dispensers to bedding or subsoiling plows are not available, TSP can be band-applied at the same rate with tractor-mounted or tractor-drawn equipment. If site conditions prohibit navigation between rows with tractors, fertilization with TSP must be postponed until after tree planting, at which time 70 grams of TSP is hand-applied to each tree.

July-September: Field Drain System Installation

Sites that hold water on the soil surface for much of the year typically require cleaning of major drains on field edges and minor ditching

within the site to foster tree establishment. These operations are best done after mechanical site preparation is completed to avoid destruction of drains by the bedding operation and to ensure opening of minor dams or drainage barriers created by bedding equipment.



Figure 4. Five-month-old *Eucalyptus benthamii* plantation one week after application of oxyfluorfen herbicide at a coastal region site in southeastern Texas. Photo by Michael Blazier.

September-October: Banded Site Preparation Herbicide

A banded application of glyphosate may be necessary before tree planting if vegetation has re-established on beds. Only for sites with no risk of erosion into downstream irrigation water, sulfometuron methyl herbicide can be tank-mixed with glyphosate to provide longer-lasting weed control. If sulfometuron methyl is used as a tank mixture, spraying must be completed at least two weeks prior to tree planting to avoid seedling damage.

Mid-October-Mid-November: Tree Planting

Tree planting is conducted using the same procedures and with the same precautions described previously for interior region tree planting.

November-January: Early Winter Banded Pre-emergence Herbicide

Oxyfluorfen herbicide is band-applied along the beds to provide pre-emergence control of a broad array of vegetation. The application can be conducted by tractor-mounted or tractor-

drawn equipment if site conditions permit, or the application can be carried out by backpack sprayers.

Oxyfluorfen can be applied over the top of seedlings, but surface soil should be moist at the time of application. Band application of oxyfluorfen can be extended into February or March as long as weeds remain under two inches in height.

Year 2

February-March: Early Spring Banded Post-emergence Herbicide

As herbaceous weeds begin to emerge, banded application of herbicides (mechanically or by backpack, depending on site conditions) along beds is necessary. Oxyfluorfen herbicide can be used if weeds are less than 2 inches tall (Figure 4). If weeds are between 2 and 4 inches tall, a tank mixture of clopyralid and fluizafop herbicides can be used. Oxyfluorfen, clopyralid, and fluizafop all can be applied over the top of seedlings.

If competing vegetation is greater than 4 inches tall or is predominantly woody vegetation, a directed spray of glyphosate by backpack sprayer is the preferred operation. Directed glyphosate also should be done between beds if vegetation has developed in those areas.

February-March: Banded Nitrogen and Phosphorus Fertilization

Nitrogen and phosphorus are band-applied in early spring as diammonium phosphate. A micronutrient fertilizer (such as CNI Southeast Mix, described previously within the description of interior region banded or hand nitrogen and phosphorus fertilization) along with the diammonium phosphate also is necessary on most sites. This mixture is band-applied at 100 pounds per acre on sites accessible to tractor-mounted or drawn equipment and at 70 grams per tree by hand on sites where tractor access is unattainable.

April-May: Spring Banded or Directed-Spray Post-emergence Herbicide

By late spring, another banded or directed-spray herbicide operation is necessary because competing vegetation re-emerges following the early spring application. Decisions between band

application of oxyfluorfen, band application of clopyralid-fluizafop mixture or directed spray of glyphosate are made on the basis of competing vegetation height and composition as described previously for the interior region early spring post-emergence herbicide treatment.

June: Midsummer Directed-Spray Post-emergence Herbicide

By midsummer, competing vegetation typically grows too quickly to be controlled with any herbicides labeled for use over the top of eucalyptus seedlings, although clopyralid-fluizafop mixtures can be used if competing vegetation remains less than 4 inches tall. A directed spray of glyphosate often is the best option for competition control.

For sites with competing vegetation comparable in height to the eucalyptus seedlings, which can occur if herbicide is not applied within a timeframe described previously, mowing or manual brush-saw operations may be necessary.

August-September: Late Summer Directed-Spray Post-emergence Herbicide

By late summer, directed spray of glyphosate generally is the only viable option for competition control. Mowing or manual brush-saw operations may be necessary for sites with competing vegetation comparable in height to the eucalyptus seedlings.

August-September: Banded Nitrogen, Phosphorus and Potassium Fertilization

Nitrogen, phosphorus, potassium and micronutrient fertilization is conducted in late summer as described previously for banded NPK fertilization for Year 2 for interior sites.

Year 3

February-March: Interbed Directed-Spray Post-emergence Herbicide

If substantial vegetation emerges between beds, directed spray of glyphosate by backpack sprayer may be necessary. Trees typically are too large to allow navigation between beds by equipment by the beginning of the second growing season after planting.

Sulfometuron methyl can be tank-mixed with glyphosate to provide a longer duration of competition control on sites that have no risk of water drainage from the site into adjacent fields with crops (particularly rice).

Summary

Eucalyptus plantations can serve a niche for supplying mills with hardwood fiber during periods when it is too wet to harvest hardwood forests in bottomland areas. Silviculture for these plantations requires more frequent operations in the first two years of the rotation than conventional forest management, with much of the management emphasis on controlling weeds. Persistent, timely competition control operations are necessary to provide the plantations with the freedom to reach their growth potential.

The silvicultural practices described in this publication were developed over the course of eight years of research trials and operational experience. This effort continues, with particular emphasis on finding faster-growing families and hybrids of eucalyptus and on improving understanding of the nutrient needs of these trees when planted in Louisiana and Texas.

Portions of southern Louisiana and Texas have the climate to support eucalyptus plantations, similar to how the region can support other tropical crops like sugarcane. These extremely fast-growing plantations have great potential to provide forest product facilities of this region with hardwood fiber.

Citations and Suggested Readings

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